

SEQUENCE LISTING

<110> Yule, D.I.
Wagner II, Larry

<120> Inositol 1,4,5-trisphosphate receptor
mutants and uses thereof

<130> 21108.0042U2

<150> PCT/US2005/002380

<151> 2005-01-26

<150> 60/539,245

<151> 2004-01-26

<160> 32

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
synthetic construct

<400> 1

Met	Ser	Asp	Lys	Met	Ser	Ser	Phe	Leu	His	Ile	Gly	Asp	Ile	Cys	Ser
1				5				10					15		
Leu	Tyr	Ala	Glu	Gly	Ser	Thr	Asn	Gly	Phe	Ile	Ser	Thr	Leu	Gly	Leu
		20						25					30		
Val	Asp	Asp	Arg	Cys	Val	Val	Gln	Pro	Glu	Ala	Gly	Asp	Leu	Asn	Asn
		35					40					45			
Pro	Pro	Lys	Lys	Phe	Arg	Asp	Cys	Leu	Phe	Lys	Leu	Cys	Pro	Met	Asn
		50				55					60				
Arg	Tyr	Ser	Ala	Gln	Lys	Gln	Phe	Trp	Lys	Ala	Ala	Lys	Pro	Gly	Ala
				70						75				80	
Asn	Ser	Thr	Thr	Asp	Ala	Val	Leu	Leu	Asn	Lys	Leu	His	His	Ala	Ala
				85					90					95	
Asp	Leu	Glu	Lys	Lys	Gln	Asn	Glu	Thr	Glu	Asn	Arg	Lys	Leu	Leu	Gly
		100						105					110		
Thr	Val	Ile	Gln	Tyr	Gly	Asn	Val	Ile	Gln	Leu	Leu	His	Leu	Lys	Ser
		115					120					125			
Asn	Lys	Tyr	Leu	Thr	Val	Asn	Lys	Arg	Leu	Pro	Ala	Leu	Leu	Glu	Lys
		130					135				140				
Asn	Ala	Met	Arg	Val	Thr	Leu	Asp	Glu	Ala	Gly	Asn	Glu	Gly	Ser	Trp
				150					155					160	
Phe	Tyr	Ile	Gln	Pro	Phe	Tyr	Lys	Leu	Arg	Ser	Ile	Gly	Asp	Ser	Val
				165					170					175	
Val	Ile	Gly	Asp	Lys	Val	Val	Leu	Asn	Pro	Val	Asn	Ala	Gly	Gln	Pro
		180						185					190		
Leu	His	Ala	Ser	Ser	His	Gln	Leu	Val	Asp	Asn	Pro	Gly	Cys	Asn	Glu
		195					200					205			
Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Val	Leu	Phe	Met
		210					215					220			
Lys	Trp	Ser	Asp	Asn	Lys	Asp	Asp	Ile	Leu	Lys	Gly	Gly	Asp	Val	Val
				230						235					240

Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His	245	250	255
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala	260	265	270
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln	275	280	285
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg	290	295	300
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro	305	310	315
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp	325	330	335
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg	Asn	Ala	Gln	Glu	Lys	Met	Val	340	345	350
Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe	355	360	365
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg	370	375	380
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His	385	390	395
Ser	Thr	Asn	Ile	Pro	Ile	Asp	Lys	Glu	Glu	Glu	Lys	Pro	Val	Met	Leu	405	410	415
Lys	Ile	Gly	Thr	Ser	Pro	Leu	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile	420	425	430
Val	Pro	Val	Ser	Pro	Ala	Glu	Val	Arg	Asp	Leu	Asp	Phe	Ala	Asn	Asp	435	440	445
Ala	Ser	Lys	Val	Leu	Gly	Ser	Ile	Ala	Gly	Lys	Leu	Glu	Lys	Gly	Thr	450	455	460
Ile	Thr	Gln	Asn	Glu	Arg	Arg	Ser	Val	Thr	Lys	Leu	Leu	Glu	Asp	Leu	465	470	475
Val	Tyr	Phe	Val	Thr	Gly	Gly	Thr	Asn	Ser	Gly	Gln	Asp	Val	Leu	Glu	485	490	495
Val	Val	Phe	Ser	Lys	Pro	Asn	Arg	Glu	Arg	Gln	Lys	Leu	Met	Arg	Glu	500	505	510
Gln	Asn	Ile	Leu	Lys	Gln	Ile	Phe	Lys	Leu	Leu	Gln	Ala	Pro	Phe	Thr	515	520	525
Asp	Cys	Gly	Asp	Gly	Pro	Met	Leu	Arg	Leu	Glu	Glu	Leu	Gly	Asp	Gln	530	535	540
Arg	His	Ala	Pro	Phe	Arg	His	Ile	Cys	Arg	Leu	Cys	Tyr	Arg	Val	Leu	545	550	555
Arg	His	Ser	Gln	Gln	Asp	Tyr	Arg	Lys	Asn	Gln	Glu	Tyr	Ile	Ala	Lys	565	570	575
Gln	Phe	Gly	Phe	Met	Gln	Lys	Gln	Ile	Gly	Tyr	Asp	Val	Leu	Ala	Glu	580	585	590
Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys	595	600	605
His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys	610	615	620
Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser	625	630	635
Met	Asn	Lys	Ser	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Ala	Val	645	650	655
Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Ile	Glu	Thr	Lys	Leu	Val	Leu	660	665	670
Ser	Arg	Phe	Glu	Phe	Glu	Gly	Val	Ser	Thr	Gly	Glu	Asn	Ala	Leu	Glu	675	680	685
Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn	690	695	700
Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys	705	710	715
Glu	Gly	Gln	Lys	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln	720		

Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
 1220 1225 1230
 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
 1235 1240 1245
 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
 1250 1255 1260
 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
 1265 1270 1275 1280
 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
 1285 1290 1295
 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
 1300 1305 1310
 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
 1315 1320 1325
 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
 1365 1370 1375
 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
 1380 1385 1390
 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 1395 1400 1405
 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
 1410 1415 1420
 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
 1445 1450 1455
 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
 1460 1465 1470
 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
 1505 1510 1515 1520
 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
 1525 1530 1535
 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
 1540 1545 1550
 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
 1635 1640 1645
 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
 1650 1655 1660
 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
 1685 1690 1695
 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly

1700					1705					1710						
Arg	Arg	Glu	Ser	Leu	Thr	Ser	Phe	Gly	Asn	Gly	Pro	Leu	Ser	Pro	Gly	
1715					1720					1725						
Gly	Pro	Ser	Lys	Pro	Gly	Gly	Gly	Gly	Gly	Gly	Pro	Gly	Ser	Gly	Ser	
1730					1735					1740						
Thr	Ser	Arg	Gly	Glu	Met	Ser	Leu	Ala	Glu	Val	Gln	Cys	His	Leu	Asp	
1745					1750					1755					1760	
Lys	Glu	Gly	Ala	Ser	Asn	Leu	Val	Ile	Asp	Leu	Ile	Met	Asn	Ala	Ser	
1765					1770					1775						
Ser	Asp	Arg	Val	Phe	His	Glu	Ser	Ile	Leu	Leu	Ala	Ile	Ala	Leu	Leu	
1780					1785					1790						
Glu	Gly	Gly	Asn	Thr	Thr	Ile	Gln	His	Ser	Phe	Phe	Cys	Arg	Leu	Thr	
1795					1800					1805						
Glu	Asp	Lys	Lys	Ser	Glu	Lys	Phe	Phe	Lys	Val	Phe	Tyr	Asp	Arg	Met	
1810					1815					1820						
Lys	Val	Ala	Gln	Gln	Glu	Ile	Lys	Ala	Thr	Val	Thr	Val	Asn	Thr	Ser	
1825					1830					1835					1840	
Asp	Leu	Gly	Asn	Lys	Lys	Lys	Asp	Asp	Glu	Val	Asp	Arg	Asp	Ala	Pro	
1845					1850					1855						
Ser	Arg	Lys	Lys	Ala	Lys	Glu	Pro	Thr	Thr	Gln	Ile	Thr	Glu	Glu	Val	
1860					1865					1870						
Arg	Asp	Gln	Leu	Leu	Glu	Ala	Ser	Ala	Ala	Thr	Arg	Lys	Ala	Phe	Thr	
1875					1880					1885						
Thr	Phe	Arg	Arg	Glu	Ala	Asp	Pro	Asp	Asp	His	Tyr	Gln	Ser	Gly	Glu	
1890					1895					1900						
Gly	Thr	Gln	Ala	Thr	Thr	Asp	Lys	Ala	Lys	Asp	Asp	Leu	Glu	Met	Ser	
1905					1910					1915					1920	
Ala	Val	Ile	Thr	Ile	Met	Gln	Pro	Ile	Leu	Arg	Phe	Leu	Gln	Leu	Leu	
1925					1930					1935						
Cys	Glu	Asn	His	Asn	Arg	Asp	Leu	Gln	Asn	Phe	Leu	Arg	Cys	Gln	Asn	
1940					1945					1950						
Asn	Lys	Thr	Asn	Tyr	Asn	Leu	Val	Cys	Glu	Thr	Leu	Gln	Phe	Leu	Asp	
1955					1960					1965						
Cys	Ile	Cys	Gly	Ser	Thr	Thr	Gly	Gly	Leu	Gly	Leu	Leu	Gly	Leu	Tyr	
1970					1975					1980						
Ile	Asn	Glu	Lys	Asn	Val	Ala	Leu	Ile	Asn	Gln	Thr	Leu	Glu	Ser	Leu	
1985					1990					1995					2000	
Thr	Glu	Tyr	Cys	Gln	Gly	Pro	Cys	His	Glu	Asn	Gln	Asn	Cys	Ile	Ala	
2005					2010					2015						
Thr	His	Glu	Ser	Asn	Gly	Ile	Asp	Ile	Ile	Thr	Ala	Leu	Ile	Leu	Asn	
2020					2025					2030						
Asp	Ile	Asn	Pro	Leu	Gly	Lys	Lys	Arg	Met	Asp	Leu	Val	Leu	Glu	Leu	
2035					2040					2045						
Lys	Asn	Asn	Ala	Ser	Lys	Leu	Leu	Leu	Ala	Ile	Met	Glu	Ser	Arg	His	
2050					2055					2060						
Asp	Ser	Glu	Asn	Ala	Glu	Arg	Ile	Leu	Tyr	Asn	Met	Arg	Pro	Lys	Glu	
2065					2070					2075					2080	
Leu	Val	Glu	Val	Ile	Lys	Lys	Ala	Tyr	Met	Gln	Gly	Glu	Val	Glu	Phe	
2085					2090					2095						
Glu	Asp	Gly	Glu	Asn	Gly	Glu	Asp	Gly	Ala	Ala	Ser	Pro	Arg	Asn	Val	
2100					2105					2110						
Gly	His	Asn	Ile	Tyr	Ile	Leu	Ala	His	Gln	Leu	Ala	Arg	His	Asn	Lys	
2115					2120					2125						
Glu	Leu	Gln	Thr	Met	Leu	Lys	Pro	Gly	Gly	Gln	Val	Asp	Gly	Asp	Glu	
2130					2135					2140						
Ala	Leu	Glu	Phe	Tyr	Ala	Lys	His	Thr	Ala	Gln	Ile	Glu	Ile	Val	Arg	
2145					2150					2155					2160	
Leu	Asp	Arg	Thr	Met	Glu	Gln	Ile	Val	Phe	Pro	Val	Pro	Ser	Ile	Cys	
2165					2170					2175						
Glu	Phe	Leu	Thr	Lys	Glu	Ser	Lys	Leu	Arg	Ile	Tyr	Tyr	Thr	Thr	Glu	
2180					2185					2190						

Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu
 2195 2200 2205
 Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro
 2210 2215 2220
 Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser
 2225 2230 2235 2240
 Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro
 2245 2250 2255
 Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu
 2260 2265 2270
 Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro
 2275 2280 2285
 Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu
 2290 2295 2300
 Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe
 2305 2310 2315 2320
 Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys
 2325 2330 2335
 Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe
 2340 2345 2350
 Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val
 2355 2360 2365
 His Glu Phe Phe Tyr Ser Leu Leu Leu Phe Asp Leu Val Tyr Arg Glu
 2370 2375 2380
 Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
 2385 2390 2395 2400
 Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
 2405 2410 2415
 Ile Val Gly Tyr Leu Phe Phe Lys Asp Asp Phe Ile Leu Glu Val Asp
 2420 2425 2430
 Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
 2435 2440 2445
 Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
 2450 2455 2460
 Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
 2465 2470 2475 2480
 Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
 2485 2490 2495
 Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val
 2500 2505 2510
 Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
 2515 2520 2525
 Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Ile Val Leu Asn Leu
 2530 2535 2540
 Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
 2545 2550 2555 2560
 Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
 2565 2570 2575
 Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
 2580 2585 2590
 Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
 2595 2600 2605
 Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
 2610 2615 2620
 Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
 2625 2630 2635 2640
 Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
 2645 2650 2655
 Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
 2660 2665 2670
 Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys

2675	2680	2685
Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val		
2690	2695	2700
Asn Pro Gln Gln Pro Ala		
2705	2710	

<210> 2

<211> 2749

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
synthetic construct

<400> 2

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser		
1	5	10
Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu		
	20	25
Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn		30
	35	40
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn		45
	50	55
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala		60
65	70	75
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala		80
	85	90
Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly		95
	100	105
Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser		110
	115	120
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys		125
	130	135
Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp		140
145	150	155
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val		160
	165	170
Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro		175
	180	185
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu		190
	195	200
Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met		205
	210	215
Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val		220
225	230	235
Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His		240
	245	250
Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala		255
	260	265
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln		270
	275	280
His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg		285
	290	295
Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro		300
305	310	315
Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp		320
	325	330
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val		335
	340	345
		350

Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe
		355						360				365			
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg
		370					375				380				
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His
385					390					395					400
Ser	Thr	Asn	Ile	Pro	Ile	Asp	Lys	Glu	Glu	Glu	Lys	Pro	Val	Met	Leu
			405						410					415	
Lys	Ile	Gly	Thr	Ser	Pro	Leu	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile
			420						425				430		
Val	Pro	Val	Ser	Pro	Ala	Glu	Val	Arg	Asp	Leu	Asp	Phe	Ala	Asn	Asp
		435					440					445			
Ala	Ser	Lys	Val	Leu	Gly	Ser	Ile	Ala	Gly	Lys	Leu	Glu	Lys	Gly	Thr
		450				455					460				
Ile	Thr	Gln	Asn	Glu	Arg	Arg	Ser	Val	Thr	Lys	Leu	Leu	Glu	Asp	Leu
465					470					475					480
Val	Tyr	Phe	Val	Thr	Gly	Gly	Thr	Asn	Ser	Gly	Gln	Asp	Val	Leu	Glu
			485						490					495	
Val	Val	Phe	Ser	Lys	Pro	Asn	Arg	Glu	Arg	Gln	Lys	Leu	Met	Arg	Glu
			500					505					510		
Gln	Asn	Ile	Leu	Lys	Gln	Ile	Phe	Lys	Leu	Leu	Gln	Ala	Pro	Phe	Thr
		515					520					525			
Asp	Cys	Gly	Asp	Gly	Pro	Met	Leu	Arg	Leu	Glu	Glu	Leu	Gly	Asp	Gln
		530				535					540				
Arg	His	Ala	Pro	Phe	Arg	His	Ile	Cys	Arg	Leu	Cys	Tyr	Arg	Val	Leu
545					550					555					560
Arg	His	Ser	Gln	Gln	Asp	Tyr	Arg	Lys	Asn	Gln	Glu	Tyr	Ile	Ala	Lys
			565						570					575	
Gln	Phe	Gly	Phe	Met	Gln	Lys	Gln	Ile	Gly	Tyr	Asp	Val	Leu	Ala	Glu
			580					585					590		
Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys
		595					600					605			
His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys
		610				615					620				
Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser
625					630					635					640
Met	Asn	Lys	Ser	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Ala	Val
			645						650					655	
Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Ile	Glu	Thr	Lys	Leu	Val	Leu
			660					665					670		
Ser	Arg	Phe	Glu	Phe	Glu	Gly	Val	Ser	Thr	Gly	Glu	Asn	Ala	Leu	Glu
		675				680						685			
Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn
		690				695					700				
Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys
705					710					715					720
Glu	Gly	Gln	Lys	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln
			725						730					735	
Leu	Asn	Leu	Phe	Ala	Arg	Met	Cys	Leu	Asp	Arg	Gln	Tyr	Leu	Ala	Ile
			740					745					750		
Asn	Glu	Ile	Ser	Gly	Gln	Leu	Asp	Val	Asp	Leu	Ile	Leu	Arg	Cys	Met
		755				760						765			
Ser	Asp	Glu	Asn	Leu	Pro	Tyr	Asp	Leu	Arg	Ala	Ser	Phe	Cys	Arg	Leu
		770				775					780				
Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro
785					790					795					800
Val	Lys	Tyr	Ala	Arg	Leu	Trp	Ser	Glu	Ile	Pro	Ser	Glu	Ile	Ala	Ile
			805						810					815	
Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg
			820					825					830		
Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arg	Asp	Val	Val

835	840	845
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe		
850	855	860
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn		
865	870	875
Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp		
	885	890
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly		
	900	905
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly		
	915	920
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Gly Phe Leu Pro Met		
	930	935
Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro		
945	950	955
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu		
	965	970
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys		
	980	985
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser		
	995	1000
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val		
	1010	1015
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile		
1025	1030	1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly		
	1045	1050
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr		
	1060	1065
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser		
	1075	1080
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val		
	1090	1095
Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp		
1105	1110	1115
Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly		
	1125	1130
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His		
	1140	1145
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr		
	1155	1160
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser		
	1170	1175
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln		
1185	1190	1195
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu		
	1205	1210
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu		
	1220	1225
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn		
	1235	1240
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn		
	1250	1255
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn		
1265	1270	1275
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val		
	1285	1290
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu		
	1300	1305
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp		
	1315	1320
		1325

Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
 1365 1370 1375
 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
 1380 1385 1390
 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 1395 1400 1405
 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
 1410 1415 1420
 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
 1445 1450 1455
 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
 1460 1465 1470
 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
 1505 1510 1515 1520
 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
 1525 1530 1535
 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
 1540 1545 1550
 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
 1635 1640 1645
 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
 1650 1655 1660
 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
 1685 1690 1695
 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn
 1700 1705 1710
 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
 1715 1720 1725
 His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
 1730 1735 1740
 Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Ser Leu Thr Ser Phe Gly
 1745 1750 1755 1760
 Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly
 1765 1770 1775
 Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
 1780 1785 1790
 Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
 1795 1800 1805
 Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile

1810	1815	1820
Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His		
1825	1830	1835
Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe		1840
	1845	1850
Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala		1855
	1860	1865
Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp		1870
	1875	1880
Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr		1885
	1890	1895
Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala		1900
1905	1910	1915
Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp		1920
	1925	1930
Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala		1935
	1940	1945
Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile		1950
	1955	1960
Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln		1965
	1970	1975
Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys		1980
1985	1990	1995
Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly		2000
	2005	2010
Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile		2015
	2020	2025
Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His		2030
	2035	2040
Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile		2045
	2050	2055
Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg		2060
2065	2070	2075
Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu		2080
	2085	2090
Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu		2095
	2100	2105
Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr		2110
	2115	2120
Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly		2125
	2130	2135
Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His		2140
2145	2150	2155
Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly		2160
	2165	2170
Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr		2175
	2180	2185
Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val		2190
	2195	2200
Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu		2205
	2210	2215
Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn		2220
2225	2230	2235
Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln		2240
	2245	2250
Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met		2255
	2260	2265
Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu		2270
	2275	2280
Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu		2285
	2290	2300

Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu
 2305 2310 2315 2320
 Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile
 2325 2330 2335
 Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr
 2340 2345 2350
 Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu
 2355 2360 2365
 Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala
 2370 2375 2380
 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile
 2385 2390 2395 2400
 Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu
 2405 2410 2415
 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser
 2420 2425 2430
 Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu
 2435 2440 2445
 Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
 2450 2455 2460
 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
 2465 2470 2475 2480
 Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
 2485 2490 2495
 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu
 2500 2505 2510
 Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu
 2515 2520 2525
 Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser
 2530 2535 2540
 Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro
 2545 2550 2555 2560
 Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Phe Met Val
 2565 2570 2575
 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
 2580 2585 2590
 Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
 2595 2600 2605
 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
 2610 2615 2620
 Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
 2625 2630 2635 2640
 Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
 2645 2650 2655
 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
 2660 2665 2670
 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
 2675 2680 2685
 Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
 2690 2695 2700
 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
 2705 2710 2715 2720
 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
 2725 2730 2735
 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
 2740 2745

<210> 3

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
synthetic construct

<400> 3

Met	Ser	Asp	Lys	Met	Ser	Ser	Phe	Leu	His	Ile	Gly	Asp	Ile	Cys	Ser	1	5	10	15
Leu	Tyr	Ala	Glu	Gly	Ser	Thr	Asn	Gly	Phe	Ile	Ser	Thr	Leu	Gly	Leu	20	25	30	
Val	Asp	Asp	Arg	Cys	Val	Val	Gln	Pro	Glu	Ala	Gly	Asp	Leu	Asn	Asn	35	40	45	
Pro	Pro	Lys	Lys	Phe	Arg	Asp	Cys	Leu	Phe	Lys	Leu	Cys	Pro	Met	Asn	50	55	60	
Arg	Tyr	Ser	Ala	Gln	Lys	Gln	Phe	Trp	Lys	Ala	Ala	Lys	Pro	Gly	Ala	65	70	75	80
Asn	Ser	Thr	Thr	Asp	Ala	Val	Leu	Leu	Asn	Lys	Leu	His	His	Ala	Ala	85	90	95	
Asp	Leu	Glu	Lys	Lys	Gln	Asn	Glu	Thr	Glu	Asn	Arg	Lys	Leu	Leu	Gly	100	105	110	
Thr	Val	Ile	Gln	Tyr	Gly	Asn	Val	Ile	Gln	Leu	Leu	His	Leu	Lys	Ser	115	120	125	
Asn	Lys	Tyr	Leu	Thr	Val	Asn	Lys	Arg	Leu	Pro	Ala	Leu	Leu	Glu	Lys	130	135	140	
Asn	Ala	Met	Arg	Val	Thr	Leu	Asp	Glu	Ala	Gly	Asn	Glu	Gly	Ser	Trp	145	150	155	160
Phe	Tyr	Ile	Gln	Pro	Phe	Tyr	Lys	Leu	Arg	Ser	Ile	Gly	Asp	Ser	Val	165	170	175	
Val	Ile	Gly	Asp	Lys	Val	Val	Leu	Asn	Pro	Val	Asn	Ala	Gly	Gln	Pro	180	185	190	
Leu	His	Ala	Ser	Ser	His	Gln	Leu	Val	Asp	Asn	Pro	Gly	Cys	Asn	Glu	195	200	205	
Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Val	Leu	Phe	Met	210	215	220	
Lys	Trp	Ser	Asp	Asn	Lys	Asp	Asp	Ile	Leu	Lys	Gly	Gly	Asp	Val	Val	225	230	235	240
Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His	245	250	255	
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala	260	265	270	
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln	275	280	285	
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg	290	295	300	
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro	305	310	315	320
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp	325	330	335	
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg	Asn	Ala	Gln	Glu	Lys	Met	Val	340	345	350	
Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe	355	360	365	
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg	370	375	380	
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His	385	390	395	400
Ser	Thr	Asn	Ile	Pro	Ile	Asp	Lys	Glu	Glu	Glu	Lys	Pro	Val	Met	Leu	405	410	415	
Lys	Ile	Gly	Thr	Ser	Pro	Leu	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile	420	425	430	

915					920					925					
Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met
930					935					940					
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro
945					950					955					
Glu	Lys	Glu	Asp	Ile	Met	Val	Met	Asp	Thr	Lys	Leu	Lys	Ile	Ile	Glu
965					970					975					
Ile	Leu	Gln	Phe	Ile	Leu	Asn	Val	Arg	Leu	Asp	Tyr	Arg	Ile	Ser	Cys
980					985					990					
Leu	Leu	Cys	Ile	Phe	Lys	Arg	Glu	Phe	Asp	Glu	Ser	Asn	Ser	Gln	Ser
995					1000					1005					
Ser	Glu	Thr	Ser	Ser	Gly	Asn	Ser	Ser	Gln	Glu	Gly	Pro	Ser	Asn	Val
1010					1015					1020					
Pro	Gly	Ala	Leu	Asp	Phe	Glu	His	Ile	Glu	Glu	Gln	Ala	Glu	Gly	Ile
1025					1030					1035					
Phe	Gly	Gly	Ser	Glu	Glu	Asn	Thr	Pro	Leu	Asp	Leu	Asp	Asp	His	Gly
1045					1050					1055					
Gly	Arg	Thr	Phe	Leu	Arg	Val	Leu	Leu	His	Leu	Thr	Met	His	Asp	Tyr
1060					1065					1070					
Pro	Pro	Leu	Val	Ser	Gly	Ala	Leu	Gln	Leu	Leu	Phe	Arg	His	Phe	Ser
1075					1080					1085					
Gln	Arg	Gln	Glu	Val	Leu	Gln	Ala	Phe	Lys	Gln	Val	Gln	Leu	Leu	Val
1090					1095					1100					
Thr	Ser	Gln	Asp	Val	Asp	Asn	Tyr	Lys	Gln	Ile	Lys	Gln	Asp	Leu	Asp
1105					1110					1115					
Gln	Leu	Arg	Ser	Ile	Val	Glu	Lys	Ser	Glu	Leu	Trp	Val	Tyr	Lys	Gly
1125					1130					1135					
Gln	Gly	Pro	Asp	Glu	Pro	Met	Asp	Gly	Ala	Ser	Gly	Glu	Asn	Glu	His
1140					1145					1150					
Lys	Lys	Thr	Glu	Glu	Gly	Thr	Ser	Lys	Pro	Leu	Lys	His	Glu	Ser	Thr
1155					1160					1165					
Ser	Ser	Tyr	Asn	Tyr	Arg	Val	Val	Lys	Glu	Ile	Leu	Ile	Arg	Leu	Ser
1170					1175					1180					
Lys	Leu	Cys	Val	Gln	Glu	Ser	Ala	Ser	Val	Arg	Lys	Ser	Arg	Lys	Gln
1185					1190					1195					
Gln	Gln	Arg	Leu	Leu	Arg	Asn	Met	Gly	Ala	His	Ala	Val	Val	Leu	Glu
1205					1210					1215					
Leu	Leu	Gln	Ile	Pro	Tyr	Glu	Lys	Ala	Glu	Asp	Thr	Lys	Met	Gln	Glu
1220					1225					1230					
Ile	Met	Arg	Leu	Ala	His	Glu	Phe	Leu	Gln	Asn	Phe	Cys	Ala	Gly	Asn
1235					1240					1245					
Gln	Gln	Asn	Gln	Ala	Leu	Leu	His	Lys	His	Ile	Asn	Leu	Phe	Leu	Asn
1250					1255					1260					
Pro	Gly	Ile	Leu	Glu	Ala	Val	Thr	Met	Gln	His	Ile	Phe	Met	Asn	Asn
1265					1270					1275					
Phe	Gln	Leu	Cys	Ser	Glu	Ile	Asn	Glu	Arg	Val	Val	Gln	His	Phe	Val
1285					1290					1295					
His	Cys	Ile	Glu	Thr	His	Gly	Arg	Asn	Val	Gln	Tyr	Ile	Lys	Phe	Leu
1300					1305					1310					
Gln	Thr	Ile	Val	Lys	Ala	Glu	Gly	Lys	Phe	Ile	Lys	Lys	Cys	Gln	Asp
1315					1320					1325					
Met	Val	Met	Ala	Glu	Leu	Val	Asn	Ser	Gly	Glu	Asp	Val	Leu	Val	Phe
1330					1335					1340					
Tyr	Asn	Asp	Arg	Ala	Ser	Phe	Gln	Thr	Leu	Ile	Gln	Met	Met	Arg	Ser
1345					1350					1355					
Glu	Arg	Asp	Arg	Met	Asp	Glu	Asn	Ser	Pro	Leu	Phe	Met	Tyr	His	Ile
1365					1370					1375					
His	Leu	Val	Glu	Leu	Leu	Ala	Val	Cys	Thr	Glu	Gly	Lys	Asn	Val	Tyr
1380					1385					1390					
Thr	Glu	Ile	Lys	Cys	Asn	Ser	Leu	Leu	Pro	Leu	Asp	Asp	Ile	Val	Arg
1395					1400					1405					

Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
 1410 1415 1420
 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
 1445 1450 1455
 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
 1460 1465 1470
 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
 1505 1510 1515 1520
 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
 1525 1530 1535
 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
 1540 1545 1550
 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
 1635 1640 1645
 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
 1650 1655 1660
 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
 1685 1690 1695
 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
 1700 1705 1710
 Arg Arg Glu Ser Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
 1715 1720 1725
 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
 1730 1735 1740
 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
 1745 1750 1755 1760
 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
 1765 1770 1775
 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
 1780 1785 1790
 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
 1795 1800 1805
 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
 1810 1815 1820
 Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
 1825 1830 1835 1840
 Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
 1845 1850 1855
 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
 1860 1865 1870
 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
 1875 1880 1885
 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu

1890	1895	1900
Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser		
1905	1910	1915
Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu		1920
	1925	1930
Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn		1935
	1940	1945
Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp		1950
	1955	1960
Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Leu Gly Leu Tyr		1965
	1970	1975
Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu		1980
1985	1990	1995
Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala		2000
	2005	2010
Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn		2015
	2020	2025
Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu		2030
	2035	2040
Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His		2045
	2050	2055
Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu		2060
2065	2070	2075
Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe		2080
	2085	2090
Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val		2095
	2100	2105
Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys		2110
	2115	2120
Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu		2125
	2130	2135
Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg		2140
2145	2150	2155
Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys		2160
	2165	2170
Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu		2175
	2180	2185
Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu		2190
	2195	2200
Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro		2205
	2210	2215
Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser		2220
2225	2230	2235
Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro		2240
	2245	2250
Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu		2255
	2260	2265
Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro		2270
	2275	2280
Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu		2285
	2290	2295
Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe		2300
2305	2310	2315
Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys		2320
	2325	2330
Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe		2335
	2340	2345
Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val		2350
	2355	2360
His Glu Phe Phe Tyr Ser Leu Leu Leu Phe Asp Leu Val Tyr Arg Glu		2365
	2370	2375
		2380

Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
 2385 2390 2395 2400
 Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
 2405 2410 2415
 Ile Val Gly Tyr Leu Phe Phe Lys Asp Asp Phe Ile Leu Glu Val Asp
 2420 2425 2430
 Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
 2435 2440 2445
 Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
 2450 2455 2460
 Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
 2465 2470 2475 2480
 Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
 2485 2490 2495
 Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val
 2500 2505 2510
 Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
 2515 2520 2525
 Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Ile Val Leu Asn Leu
 2530 2535 2540
 Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
 2545 2550 2555 2560
 Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
 2565 2570 2575
 Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
 2580 2585 2590
 Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
 2595 2600 2605
 Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
 2610 2615 2620
 Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
 2625 2630 2635 2640
 Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
 2645 2650 2655
 Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
 2660 2665 2670
 Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
 2675 2680 2685
 Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
 2690 2695 2700
 Asn Pro Gln Gln Pro Ala
 2705 2710

<210> 4

<211> 2749

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 4

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser
 1 5 10 15
 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
 20 25 30
 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
 35 40 45

Pro	Pro	Lys	Lys	Phe	Arg	Asp	Cys	Leu	Phe	Lys	Leu	Cys	Pro	Met	Asn	
50						55					60					
Arg	Tyr	Ser	Ala	Gln	Lys	Gln	Phe	Trp	Lys	Ala	Ala	Lys	Pro	Gly	Ala	
65					70				75						80	
Asn	Ser	Thr	Thr	Asp	Ala	Val	Leu	Leu	Asn	Lys	Leu	His	His	Ala	Ala	
				85					90					95		
Asp	Leu	Glu	Lys	Lys	Gln	Asn	Glu	Thr	Glu	Asn	Arg	Lys	Leu	Leu	Gly	
			100					105					110			
Thr	Val	Ile	Gln	Tyr	Gly	Asn	Val	Ile	Gln	Leu	Leu	His	Leu	Lys	Ser	
		115				120						125				
Asn	Lys	Tyr	Leu	Thr	Val	Asn	Lys	Arg	Leu	Pro	Ala	Leu	Leu	Glu	Lys	
	130					135					140					
Asn	Ala	Met	Arg	Val	Thr	Leu	Asp	Glu	Ala	Gly	Asn	Glu	Gly	Ser	Trp	
145					150					155					160	
Phe	Tyr	Ile	Gln	Pro	Phe	Tyr	Lys	Leu	Arg	Ser	Ile	Gly	Asp	Ser	Val	
			165						170					175		
Val	Ile	Gly	Asp	Lys	Val	Val	Leu	Asn	Pro	Val	Asn	Ala	Gly	Gln	Pro	
		180						185					190			
Leu	His	Ala	Ser	Ser	His	Gln	Leu	Val	Asp	Asn	Pro	Gly	Cys	Asn	Glu	
		195					200					205				
Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Val	Leu	Phe	Met	
	210					215					220					
Lys	Trp	Ser	Asp	Asn	Lys	Asp	Asp	Ile	Leu	Lys	Gly	Gly	Asp	Val	Val	
225				230						235					240	
Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His	
			245						250					255		
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala	
		260					265						270			
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln	
		275					280					285				
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg	
	290				295					300						
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro	
305					310					315					320	
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp	
			325						330					335		
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg	Asn	Ala	Gln	Glu	Lys	Met	Val	
		340							345				350			
Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe	
		355					360					365				
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg	
	370					375					380					
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His	
385					390					395					400	
Ser	Thr	Asn	Ile	Pro	Ile	Asp	Lys	Glu	Glu	Glu	Lys	Pro	Val	Met	Leu	
			405						410					415		
Lys	Ile	Gly	Thr	Ser	Pro	Leu	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile	
		420						425					430			
Val	Pro	Val	Ser	Pro	Ala	Glu	Val	Arg	Asp	Leu	Asp	Phe	Ala	Asn	Asp	
	435						440					445				
Ala	Ser	Lys	Val	Leu	Gly	Ser	Ile	Ala	Gly	Lys	Leu	Glu	Lys	Gly	Thr	
	450					455					460					
Ile	Thr	Gln	Asn	Glu	Arg	Arg	Ser	Val	Thr	Lys	Leu	Leu	Glu	Asp	Leu	
465					470					475					480	
Val	Tyr	Phe	Val	Thr	Gly	Gly	Thr	Asn	Ser	Gly	Gln	Asp	Val	Leu	Glu	
			485						490					495		
Val	Val	Phe	Ser	Lys	Pro	Asn	Arg	Glu	Arg	Gln	Lys	Leu	Met	Arg	Glu	
		500						505					510			
Gln	Asn	Ile	Leu	Lys	Gln	Ile	Phe	Lys	Leu	Leu	Gln	Ala	Pro	Phe	Thr	
		515						520				525				
Asp	Cys	Gly	Asp	Gly	Pro	Met	Leu	Arg	Leu	Glu	Glu	Leu	Gly	Asp	Gln	

530	535	540
Arg His Ala Pro Phe	Arg His Ile Cys	Arg Leu Cys Tyr
545	550	555
Arg His Ser Gln Gln	Asp Tyr Arg Lys	Asn Gln Glu Tyr
565	570	575
Gln Phe Gly Phe Met	Gln Lys Gln Ile	Gly Tyr Asp Val
580	585	590
Asp Thr Ile Thr Ala	Leu Leu His Asn	Asn Arg Lys Leu
595	600	605
His Ile Thr Ala Ala	Glu Ile Asp Thr	Phe Val Ser Leu
610	615	620
Asn Arg Glu Pro Arg	Phe Leu Asp Tyr	Leu Ser Asp Leu
625	630	635
Met Asn Lys Ser Ile	Pro Val Thr Gln	Glu Leu Ile Cys
645	650	655
Leu Asn Pro Thr Asn	Ala Asp Ile Leu	Ile Glu Thr Lys
660	665	670
Ser Arg Phe Glu Phe	Glu Gly Val Ser	Thr Gly Glu Asn
675	680	685
Ala Gly Glu Asp Glu	Glu Glu Val Trp	Leu Phe Trp Arg
690	695	700
Lys Glu Ile Arg Ser	Lys Ser Val Arg	Glu Leu Ala Gln
705	710	715
Glu Gly Gln Lys Glu	Asp Arg Asp Val	Leu Ser Tyr Tyr
725	730	735
Leu Asn Leu Phe Ala	Arg Met Cys Leu	Asp Arg Gln Tyr
740	745	750
Asn Glu Ile Ser Gly	Gln Leu Asp Val	Asp Leu Ile Leu
755	760	765
Ser Asp Glu Asn Leu	Pro Tyr Asp Leu	Arg Ala Ser Phe
770	775	780
Met Leu His Met His	Val Asp Arg Asp	Pro Gln Glu Gln
785	790	795
Val Lys Tyr Ala Arg	Leu Trp Ser Glu	Ile Pro Ser Glu
805	810	815
Asp Asp Tyr Asp Ser	Ser Gly Ala Ser	Lys Asp Glu Ile
820	825	830
Phe Ala Gln Thr Met	Glu Phe Val Glu	Glu Tyr Leu Arg
835	840	845
Cys Gln Arg Phe Pro	Phe Ser Asp Lys	Glu Lys Asn Lys
850	855	860
Glu Val Val Asn Leu	Ala Arg Asn Leu	Ile Tyr Phe Gly
865	870	875
Phe Ser Asp Leu Leu	Arg Leu Thr Lys	Ile Leu Leu Ala
885	890	895
Cys Val His Val Thr	Thr Ile Phe Pro	Ile Ser Lys Met
900	905	910
Glu Glu Asn Lys Gly	Ser Asn Val Met	Arg Ser Ile His
915	920	925
Glu Leu Met Thr Gln	Val Val Leu Arg	Gly Gly Phe Leu
930	935	940
Thr Pro Met Ala Ala	Ala Pro Glu Gly	Asn Val Lys Gln
945	950	955
Glu Lys Glu Asp Ile	Met Val Met Asp	Thr Lys Leu Lys
965	970	975
Ile Leu Gln Phe Ile	Leu Asn Val Arg	Leu Asp Tyr Arg
980	985	990
Leu Leu Cys Ile Phe	Lys Arg Glu Phe	Asp Glu Ser Asn
995	1000	1005
Ser Glu Thr Ser Ser	Gly Asn Ser Ser	Gln Glu Gly Pro
1010	1015	1020

Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
 1025 1030 1035 1040
 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
 1045 1050 1055
 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
 1060 1065 1070
 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
 1075 1080 1085
 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
 1090 1095 1100
 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
 1105 1110 1115 1120
 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
 1125 1130 1135
 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
 1140 1145 1150
 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
 1155 1160 1165
 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
 1170 1175 1180
 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
 1185 1190 1195 1200
 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
 1205 1210 1215
 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
 1220 1225 1230
 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
 1235 1240 1245
 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
 1250 1255 1260
 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
 1265 1270 1275 1280
 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
 1285 1290 1295
 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
 1300 1305 1310
 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
 1315 1320 1325
 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
 1365 1370 1375
 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
 1380 1385 1390
 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 1395 1400 1405
 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
 1410 1415 1420
 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
 1445 1450 1455
 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
 1460 1465 1470
 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr

1505		1510		1515		1520
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys						
	1525			1530		1535
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro						
	1540			1545		1550
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn						
	1555			1560		1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala						
	1570			1575		1580
Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile						
1585		1590		1595		1600
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg						
	1605			1610		1615
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg						
	1620			1625		1630
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu						
	1635			1640		1645
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu						
	1650			1655		1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg						
1665		1670		1675		1680
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile						
	1685			1690		1695
Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn						
	1700			1705		1710
Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp						
	1715			1720		1725
His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr						
	1730			1735		1740
Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Ser Leu Thr Ser Phe Gly						
1745		1750		1755		1760
Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly						
	1765			1770		1775
Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala						
	1780			1785		1790
Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile						
	1795			1800		1805
Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile						
	1810			1815		1820
Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His						
1825		1830		1835		1840
Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe						
	1845			1850		1855
Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala						
	1860			1865		1870
Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp						
	1875			1880		1885
Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr						
	1890			1895		1900
Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala						
1905		1910		1915		1920
Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp						
	1925			1930		1935
Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala						
	1940			1945		1950
Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile						
	1955			1960		1965
Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln						
	1970			1975		1980
Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys						
1985		1990		1995		2000

Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly
 2005 2010 2015
 Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile
 2020 2025 2030
 Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
 2035 2040 2045
 Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile
 2050 2055 2060
 Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg
 2065 2070 2075 2080
 Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu
 2085 2090 2095
 Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu
 2100 2105 2110
 Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr
 2115 2120 2125
 Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly
 2130 2135 2140
 Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His
 2145 2150 2155 2160
 Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly
 2165 2170 2175
 Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr
 2180 2185 2190
 Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val
 2195 2200 2205
 Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu
 2210 2215 2220
 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
 2225 2230 2235 2240
 Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln
 2245 2250 2255
 Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met
 2260 2265 2270
 Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu
 2275 2280 2285
 Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu
 2290 2295 2300
 Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu
 2305 2310 2315 2320
 Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile
 2325 2330 2335
 Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr
 2340 2345 2350
 Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu
 2355 2360 2365
 Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala
 2370 2375 2380
 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile
 2385 2390 2395 2400
 Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu
 2405 2410 2415
 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser
 2420 2425 2430
 Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu
 2435 2440 2445
 Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
 2450 2455 2460
 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
 2465 2470 2475 2480
 Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys

```
<220>
<223> Description of Artificial Sequence:/note =
        synthetic construct
```

24

Asn	Lys	Tyr	Leu	Thr	Val	Asn	Lys	Arg	Leu	Pro	Ala	Leu	Leu	Glu	Lys	130	135	140
Asn	Ala	Met	Arg	Val	Thr	Leu	Asp	Glu	Ala	Gly	Asn	Glu	Gly	Ser	Trp	145	150	155
Phe	Tyr	Ile	Gln	Pro	Phe	Tyr	Lys	Leu	Arg	Ser	Ile	Gly	Asp	Ser	Val	165	170	175
Val	Ile	Gly	Asp	Lys	Val	Val	Leu	Asn	Pro	Val	Asn	Ala	Gly	Gln	Pro	180	185	190
Leu	His	Ala	Ser	Ser	His	Gln	Leu	Val	Asp	Asn	Pro	Gly	Cys	Asn	Glu	195	200	205
Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Val	Leu	Phe	Met	210	215	220
Lys	Trp	Ser	Asp	Asn	Lys	Asp	Asp	Ile	Leu	Lys	Gly	Gly	Asp	Val	Val	225	230	235
Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His	245	250	255
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala	260	265	270
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln	275	280	285
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg	290	295	300
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro	305	310	315
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp	325	330	335
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg	Asn	Ala	Gln	Glu	Lys	Met	Val	340	345	350
Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe	355	360	365
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg	370	375	380
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His	385	390	395
Ser	Thr	Asn	Ile	Pro	Ile	Asp	Lys	Glu	Glu	Lys	Pro	Val	Met	Leu		405	410	415
Lys	Ile	Gly	Thr	Ser	Pro	Leu	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile	420	425	430
Val	Pro	Val	Ser	Pro	Ala	Glu	Val	Arg	Asp	Leu	Asp	Phe	Ala	Asn	Asp	435	440	445
Ala	Ser	Lys	Val	Leu	Gly	Ser	Ile	Ala	Gly	Lys	Leu	Glu	Lys	Gly	Thr	450	455	460
Ile	Thr	Gln	Asn	Glu	Arg	Arg	Ser	Val	Thr	Lys	Leu	Leu	Glu	Asp	Leu	465	470	475
Val	Tyr	Phe	Val	Thr	Gly	Gly	Thr	Asn	Ser	Gly	Gln	Asp	Val	Leu	Glu	485	490	495
Val	Val	Phe	Ser	Lys	Pro	Asn	Arg	Glu	Arg	Gln	Lys	Leu	Met	Arg	Glu	500	505	510
Gln	Asn	Ile	Leu	Lys	Gln	Ile	Phe	Lys	Leu	Leu	Gln	Ala	Pro	Phe	Thr	515	520	525
Asp	Cys	Gly	Asp	Gly	Pro	Met	Leu	Arg	Leu	Glu	Glu	Leu	Gly	Asp	Gln	530	535	540
Arg	His	Ala	Pro	Phe	Arg	His	Ile	Cys	Arg	Leu	Cys	Tyr	Arg	Val	Leu	545	550	555
Arg	His	Ser	Gln	Gln	Asp	Tyr	Arg	Lys	Asn	Gln	Glu	Tyr	Ile	Ala	Lys	565	570	575
Gln	Phe	Gly	Phe	Met	Gln	Lys	Gln	Ile	Gly	Tyr	Asp	Val	Leu	Ala	Glu	580	585	590
Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys	595	600	605
His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys			

610	615	620
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser		
625	630	635
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val		640
	645	650
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu		655
	660	665
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu		670
	675	680
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn		685
	690	695
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys		700
705	710	715
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln		720
	725	730
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile		735
	740	745
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met		750
	755	760
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu		765
	770	775
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro		780
785	790	795
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile		800
	805	810
Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg		815
	820	825
Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val		830
	835	840
Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe		845
	850	855
Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn		860
865	870	875
Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp		880
	885	890
Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly		895
	900	905
Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly		910
	915	920
Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Gly Phe Leu Pro Met		925
	930	935
Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro		940
945	950	955
Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu		960
	965	970
Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys		975
	980	985
Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser		990
	995	1000
Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val		1005
	1010	1015
Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile		1020
1025	1030	1035
Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly		1040
	1045	1050
Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr		1055
	1060	1065
Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser		1070
	1075	1080
Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val		1085
	1090	1095
		1100

Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
 1105 1110 1115 1120
 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
 1125 1130 1135
 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
 1140 1145 1150
 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
 1155 1160 1165
 Ser Ser Tyr Asn Tyr Arg Val Lys Glu Ile Leu Ile Arg Leu Ser
 1170 1175 1180
 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
 1185 1190 1195 1200
 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
 1205 1210 1215
 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
 1220 1225 1230
 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
 1235 1240 1245
 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
 1250 1255 1260
 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
 1265 1270 1275 1280
 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
 1285 1290 1295
 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
 1300 1305 1310
 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
 1315 1320 1325
 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
 1365 1370 1375
 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
 1380 1385 1390
 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 1395 1400 1405
 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
 1410 1415 1420
 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
 1445 1450 1455
 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
 1460 1465 1470
 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
 1505 1510 1515 1520
 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
 1525 1530 1535
 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
 1540 1545 1550
 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile

1585	1590	1595	1600
Ile Glu Arg Leu Gln Asp	Ile Val Ser Ala Leu Glu Asp	Arg Leu Arg	
1605	1610	1615	
Pro Leu Val Gln Ala Glu Leu Ser	Val Leu Val Asp Val Leu His Arg		
1620	1625	1630	
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp	Ala Arg Arg Lys Cys Glu		
1635	1640	1645	
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu			
1650	1655	1660	
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg			
1665	1670	1675	1680
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu			
1685	1690	1695	
Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly			
1700	1705	1710	
Arg Arg Glu Glu Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly			
1715	1720	1725	
Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser			
1730	1735	1740	
Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp			
1745	1750	1755	1760
Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser			
1765	1770	1775	
Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu			
1780	1785	1790	
Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr			
1795	1800	1805	
Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met			
1810	1815	1820	
Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser			
1825	1830	1835	1840
Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro			
1845	1850	1855	
Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val			
1860	1865	1870	
Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr			
1875	1880	1885	
Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu			
1890	1895	1900	
Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser			
1905	1910	1915	1920
Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu			
1925	1930	1935	
Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn			
1940	1945	1950	
Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp			
1955	1960	1965	
Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Leu Gly Leu Tyr			
1970	1975	1980	
Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu			
1985	1990	1995	2000
Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala			
2005	2010	2015	
Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn			
2020	2025	2030	
Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu			
2035	2040	2045	
Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His			
2050	2055	2060	
Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu			
2065	2070	2075	2080

30

Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His	
				245					250					255		
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala	
			260					265					270			
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln	
		275					280					285				
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg	
	290					295					300					
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro	
305					310					315					320	
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp	
				325					330					335		
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg	Asn	Ala	Gln	Glu	Lys	Met	Val	
		340						345					350			
Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe	
	355						360					365				
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg	
	370					375					380					
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His	
385					390					395					400	
Ser	Thr	Asn	Ile	Pro	Ile	Asp	Lys	Glu	Glu	Glu	Lys	Pro	Val	Met	Leu	
			405						410					415		
Lys	Ile	Gly	Thr	Ser	Pro	Leu	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile	
		420						425					430			
Val	Pro	Val	Ser	Pro	Ala	Glu	Val	Arg	Asp	Leu	Asp	Phe	Ala	Asn	Asp	
		435					440					445				
Ala	Ser	Lys	Val	Leu	Gly	Ser	Ile	Ala	Gly	Lys	Leu	Glu	Lys	Gly	Thr	
	450				455						460					
Ile	Thr	Gln	Asn	Glu	Arg	Arg	Ser	Val	Thr	Lys	Leu	Leu	Glu	Asp	Leu	
465				470					475						480	
Val	Tyr	Phe	Val	Thr	Gly	Gly	Thr	Asn	Ser	Gly	Gln	Asp	Val	Leu	Glu	
			485					490						495		
Val	Val	Phe	Ser	Lys	Pro	Asn	Arg	Glu	Arg	Gln	Lys	Leu	Met	Arg	Glu	
		500						505					510			
Gln	Asn	Ile	Leu	Lys	Gln	Ile	Phe	Lys	Leu	Leu	Gln	Ala	Pro	Phe	Thr	
		515					520					525				
Asp	Cys	Gly	Asp	Gly	Pro	Met	Leu	Arg	Leu	Glu	Glu	Leu	Gly	Asp	Gln	
	530					535				540						
Arg	His	Ala	Pro	Phe	Arg	His	Ile	Cys	Arg	Leu	Cys	Tyr	Arg	Val	Leu	
545					550					555					560	
Arg	His	Ser	Gln	Gln	Asp	Tyr	Arg	Lys	Asn	Gln	Glu	Tyr	Ile	Ala	Lys	
			565						570					575		
Gln	Phe	Gly	Phe	Met	Gln	Lys	Gln	Ile	Gly	Tyr	Asp	Val	Leu	Ala	Glu	
		580					585						590			
Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys	
	595						600					605				
His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys	
	610					615					620					
Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser	
625					630					635					640	
Met	Asn	Lys	Ser	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Ala	Val	
			645						650					655		
Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Ile	Glu	Thr	Lys	Leu	Val	Leu	
		660					665						670			
Ser	Arg	Phe	Glu	Phe	Glu	Gly	Val	Ser	Thr	Gly	Glu	Asn	Ala	Leu	Glu	
		675				680						685				
Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn	
	690					695					700					
Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys	
705					710					715					720	
Glu	Gly	Gln	Lys	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln	

Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
 1220 1225 1230
 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
 1235 1240 1245
 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
 1250 1255 1260
 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
 1265 1270 1275 1280
 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
 1285 1290 1295
 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
 1300 1305 1310
 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
 1315 1320 1325
 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
 1365 1370 1375
 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
 1380 1385 1390
 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 1395 1400 1405
 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
 1410 1415 1420
 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
 1445 1450 1455
 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
 1460 1465 1470
 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
 1505 1510 1515 1520
 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
 1525 1530 1535
 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
 1540 1545 1550
 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
 1635 1640 1645
 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
 1650 1655 1660
 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
 1685 1690 1695
 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn

1700					1705					1710					
Ser	Thr	Glu	Glu	Leu	Glu	Pro	Ser	Pro	Pro	Leu	Arg	Gln	Leu	Glu	Asp
1715					1720					1725					
His	Lys	Arg	Gly	Glu	Ala	Leu	Arg	Gln	Ile	Leu	Val	Asn	Arg	Tyr	Tyr
1730					1735					1740					
Gly	Asn	Ile	Arg	Pro	Ser	Gly	Arg	Arg	Glu	Glu	Leu	Thr	Ser	Phe	Gly
1745					1750					1755					
Asn	Gly	Pro	Leu	Ser	Pro	Gly	Gly	Pro	Ser	Lys	Pro	Gly	Gly	Gly	Gly
1765					1770					1775					
Gly	Gly	Pro	Gly	Ser	Gly	Ser	Thr	Ser	Arg	Gly	Glu	Met	Ser	Leu	Ala
1780					1785					1790					
Glu	Val	Gln	Cys	His	Leu	Asp	Lys	Glu	Gly	Ala	Ser	Asn	Leu	Val	Ile
1795					1800					1805					
Asp	Leu	Ile	Met	Asn	Ala	Ser	Ser	Asp	Arg	Val	Phe	His	Glu	Ser	Ile
1810					1815					1820					
Leu	Leu	Ala	Ile	Ala	Leu	Leu	Glu	Gly	Gly	Asn	Thr	Thr	Ile	Gln	His
1825					1830					1835					
Ser	Phe	Phe	Cys	Arg	Leu	Thr	Glu	Asp	Lys	Lys	Ser	Glu	Lys	Phe	Phe
1845					1850					1855					
Lys	Val	Phe	Tyr	Asp	Arg	Met	Lys	Val	Ala	Gln	Gln	Glu	Ile	Lys	Ala
1860					1865					1870					
Thr	Val	Thr	Val	Asn	Thr	Ser	Asp	Leu	Gly	Asn	Lys	Lys	Lys	Asp	Asp
1875					1880					1885					
Glu	Val	Asp	Arg	Asp	Ala	Pro	Ser	Arg	Lys	Lys	Ala	Lys	Glu	Pro	Thr
1890					1895					1900					
Thr	Gln	Ile	Thr	Glu	Glu	Val	Arg	Asp	Gln	Leu	Leu	Glu	Ala	Ser	Ala
1905					1910					1915					
Ala	Thr	Arg	Lys	Ala	Phe	Thr	Thr	Phe	Arg	Arg	Glu	Ala	Asp	Pro	Asp
1925					1930					1935					
Asp	His	Tyr	Gln	Ser	Gly	Glu	Gly	Thr	Gln	Ala	Thr	Thr	Asp	Lys	Ala
1940					1945					1950					
Lys	Asp	Asp	Leu	Glu	Met	Ser	Ala	Val	Ile	Thr	Ile	Met	Gln	Pro	Ile
1955					1960					1965					
Leu	Arg	Phe	Leu	Gln	Leu	Leu	Cys	Glu	Asn	His	Asn	Arg	Asp	Leu	Gln
1970					1975					1980					
Asn	Phe	Leu	Arg	Cys	Gln	Asn	Asn	Lys	Thr	Asn	Tyr	Asn	Leu	Val	Cys
1985					1990					1995					
Glu	Thr	Leu	Gln	Phe	Leu	Asp	Cys	Ile	Cys	Gly	Ser	Thr	Thr	Gly	Gly
2005					2010					2015					
Leu	Gly	Leu	Leu	Gly	Leu	Tyr	Ile	Asn	Glu	Lys	Asn	Val	Ala	Leu	Ile
2020					2025					2030					
Asn	Gln	Thr	Leu	Glu	Ser	Leu	Thr	Glu	Tyr	Cys	Gln	Gly	Pro	Cys	His
2035					2040					2045					
Glu	Asn	Gln	Asn	Cys	Ile	Ala	Thr	His	Glu	Ser	Asn	Gly	Ile	Asp	Ile
2050					2055					2060					
Ile	Thr	Ala	Leu	Ile	Leu	Asn	Asp	Ile	Asn	Pro	Leu	Gly	Lys	Lys	Arg
2065					2070					2075					
Met	Asp	Leu	Val	Leu	Glu	Leu	Lys	Asn	Asn	Ala	Ser	Lys	Leu	Leu	Leu
2085					2090					2095					
Ala	Ile	Met	Glu	Ser	Arg	His	Asp	Ser	Glu	Asn	Ala	Glu	Arg	Ile	Leu
2100					2105					2110					
Tyr	Asn	Met	Arg	Pro	Lys	Glu	Leu	Val	Glu	Val	Ile	Lys	Lys	Ala	Tyr
2115					2120					2125					
Met	Gln	Gly	Glu	Val	Glu	Phe	Glu	Asp	Gly	Glu	Asn	Gly	Glu	Asp	Gly
2130					2135					2140					
Ala	Ala	Ser	Pro	Arg	Asn	Val	Gly	His	Asn	Ile	Tyr	Ile	Leu	Ala	His
2145					2150					2155					
Gln	Leu	Ala	Arg	His	Asn	Lys	Glu	Leu	Gln	Thr	Met	Leu	Lys	Pro	Gly
2165					2170					2175					
Gly	Gln	Val	Asp	Gly	Asp	Glu	Ala	Leu	Glu	Phe	Tyr	Ala	Lys	His	Thr
2180					2185					2190					

Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val
 2195 2200 2205
 Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu
 2210 2215 2220
 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
 2225 2230 2235 2240
 Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln
 2245 2250 2255
 Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met
 2260 2265 2270
 Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu
 2275 2280 2285
 Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu
 2290 2295 2300
 Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu
 2305 2310 2315 2320
 Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile
 2325 2330 2335
 Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr
 2340 2345 2350
 Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu
 2355 2360 2365
 Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala
 2370 2375 2380
 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile
 2385 2390 2395 2400
 Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu
 2405 2410 2415
 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser
 2420 2425 2430
 Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu
 2435 2440 2445
 Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
 2450 2455 2460
 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
 2465 2470 2475 2480
 Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
 2485 2490 2495
 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu
 2500 2505 2510
 Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu
 2515 2520 2525
 Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser
 2530 2535 2540
 Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro
 2545 2550 2555 2560
 Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Phe Met Val
 2565 2570 2575
 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
 2580 2585 2590
 Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
 2595 2600 2605
 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
 2610 2615 2620
 Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
 2625 2630 2635 2640
 Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
 2645 2650 2655
 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
 2660 2665 2670
 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu

	2675		2680		2685
Gly	Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr				
	2690		2695		2700
Met	Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp				
2705		2710		2715	2720
Gln	Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly				
	2725		2730		2735
His	Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala				
	2740		2745		

<210> 7

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
synthetic construct

<400> 7

Met	Ser	Asp	Lys	Met	Ser	Ser	Phe	Leu	His	Ile	Gly	Asp	Ile	Cys	Ser
1				5				10						15	
Leu	Tyr	Ala	Glu	Gly	Ser	Thr	Asn	Gly	Phe	Ile	Ser	Thr	Leu	Gly	Leu
		20						25					30		
Val	Asp	Asp	Arg	Cys	Val	Val	Gln	Pro	Glu	Ala	Gly	Asp	Leu	Asn	Asn
		35					40					45			
Pro	Pro	Lys	Lys	Phe	Arg	Asp	Cys	Leu	Phe	Lys	Leu	Cys	Pro	Met	Asn
		50				55					60				
Arg	Tyr	Ser	Ala	Gln	Lys	Gln	Phe	Trp	Lys	Ala	Ala	Lys	Pro	Gly	Ala
65					70					75					80
Asn	Ser	Thr	Thr	Asp	Ala	Val	Leu	Leu	Asn	Lys	Leu	His	His	Ala	Ala
				85					90					95	
Asp	Leu	Glu	Lys	Lys	Gln	Asn	Glu	Thr	Glu	Asn	Arg	Lys	Leu	Leu	Gly
			100					105					110		
Thr	Val	Ile	Gln	Tyr	Gly	Asn	Val	Ile	Gln	Leu	Leu	His	Leu	Lys	Ser
		115					120					125			
Asn	Lys	Tyr	Leu	Thr	Val	Asn	Lys	Arg	Leu	Pro	Ala	Leu	Leu	Glu	Lys
	130					135					140				
Asn	Ala	Met	Arg	Val	Thr	Leu	Asp	Glu	Ala	Gly	Asn	Glu	Gly	Ser	Trp
145					150				155						160
Phe	Tyr	Ile	Gln	Pro	Phe	Tyr	Lys	Leu	Arg	Ser	Ile	Gly	Asp	Ser	Val
			165					170						175	
Val	Ile	Gly	Asp	Lys	Val	Val	Leu	Asn	Pro	Val	Asn	Ala	Gly	Gln	Pro
			180					185					190		
Leu	His	Ala	Ser	Ser	His	Gln	Leu	Val	Asp	Asn	Pro	Gly	Cys	Asn	Glu
		195					200					205			
Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Val	Leu	Phe	Met
	210					215					220				
Lys	Trp	Ser	Asp	Asn	Lys	Asp	Asp	Ile	Leu	Lys	Gly	Gly	Asp	Val	Val
225					230					235					240
Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His
			245						250					255	
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala
			260					265					270		
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln
		275					280					285			
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg
	290					295					300				
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro
305					310					315					320


```

Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
      325                      330                      335
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
      340                      345                      350
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
      355                      360                      365
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
      370                      375                      380
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
      385                      390                      395                      400
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu
      405                      410                      415
Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
      420                      425                      430
Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
      435                      440                      445
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
      450                      455                      460
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
      465                      470                      475                      480
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
      485                      490                      495
Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu
      500                      505                      510
Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr
      515                      520                      525
Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln
      530                      535                      540
Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu
      545                      550                      555                      560
Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys
      565                      570                      575
Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu
      580                      585                      590
Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys
      595                      600                      605
His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys
      610                      615                      620
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser
      625                      630                      635                      640
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val
      645                      650                      655
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu
      660                      665                      670
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu
      675                      680                      685
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn
      690                      695                      700
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys
      705                      710                      715                      720
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln
      725                      730                      735
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile
      740                      745                      750
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met
      755                      760                      765
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu
      770                      775                      780
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro
      785                      790                      795                      800
Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile

```

				805					810				815		
Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg
			820					825					830		
Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arg	Asp	Val	Val
			835					840					845		
Cys	Gln	Arg	Phe	Pro	Phe	Ser	Asp	Lys	Glu	Lys	Asn	Lys	Leu	Thr	Phe
			850					855					860		
Glu	Val	Val	Asn	Leu	Ala	Arg	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Asn
865						870				875					880
Phe	Ser	Asp	Leu	Leu	Arg	Leu	Thr	Lys	Ile	Leu	Leu	Ala	Ile	Leu	Asp
						885				890					895
Cys	Val	His	Val	Thr	Thr	Ile	Phe	Pro	Ile	Ser	Lys	Met	Thr	Lys	Gly
			900					905					910		
Glu	Glu	Asn	Lys	Gly	Ser	Asn	Val	Met	Arg	Ser	Ile	His	Gly	Val	Gly
			915					920					925		
Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met
			930					935					940		
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro
945						950					955				960
Glu	Lys	Glu	Asp	Ile	Met	Val	Met	Asp	Thr	Lys	Leu	Lys	Ile	Ile	Glu
						965				970					975
Ile	Leu	Gln	Phe	Ile	Leu	Asn	Val	Arg	Leu	Asp	Tyr	Arg	Ile	Ser	Cys
			980					985					990		
Leu	Leu	Cys	Ile	Phe	Lys	Arg	Glu	Phe	Asp	Glu	Ser	Asn	Ser	Gln	Ser
			995					1000					1005		
Ser	Glu	Thr	Ser	Ser	Gly	Asn	Ser	Ser	Gln	Glu	Gly	Pro	Ser	Asn	Val
			1010					1015					1020		
Pro	Gly	Ala	Leu	Asp	Phe	Glu	His	Ile	Glu	Glu	Gln	Ala	Glu	Gly	Ile
1025						1030					1035				1040
Phe	Gly	Gly	Ser	Glu	Glu	Asn	Thr	Pro	Leu	Asp	Leu	Asp	Asp	His	Gly
						1045				1050					1055
Gly	Arg	Thr	Phe	Leu	Arg	Val	Leu	Leu	His	Leu	Thr	Met	His	Asp	Tyr
			1060					1065					1070		
Pro	Pro	Leu	Val	Ser	Gly	Ala	Leu	Gln	Leu	Leu	Phe	Arg	His	Phe	Ser
			1075					1080					1085		
Gln	Arg	Gln	Glu	Val	Leu	Gln	Ala	Phe	Lys	Gln	Val	Gln	Leu	Leu	Val
			1090					1095					1100		
Thr	Ser	Gln	Asp	Val	Asp	Asn	Tyr	Lys	Gln	Ile	Lys	Gln	Asp	Leu	Asp
1105						1110					1115				1120
Gln	Leu	Arg	Ser	Ile	Val	Glu	Lys	Ser	Glu	Leu	Trp	Val	Tyr	Lys	Gly
						1125				1130					1135
Gln	Gly	Pro	Asp	Glu	Pro	Met	Asp	Gly	Ala	Ser	Gly	Glu	Asn	Glu	His
			1140					1145					1150		
Lys	Lys	Thr	Glu	Glu	Gly	Thr	Ser	Lys	Pro	Leu	Lys	His	Glu	Ser	Thr
			1155					1160					1165		
Ser	Ser	Tyr	Asn	Tyr	Arg	Val	Val	Lys	Glu	Ile	Leu	Ile	Arg	Leu	Ser
			1170					1175					1180		
Lys	Leu	Cys	Val	Gln	Glu	Ser	Ala	Ser	Val	Arg	Lys	Ser	Arg	Lys	Gln
1185						1190				1195					1200
Gln	Gln	Arg	Leu	Leu	Arg	Asn	Met	Gly	Ala	His	Ala	Val	Val	Leu	Glu
						1205				1210					1215
Leu	Leu	Gln	Ile	Pro	Tyr	Glu	Lys	Ala	Glu	Asp	Thr	Lys	Met	Gln	Glu
			1220					1225					1230		
Ile	Met	Arg	Leu	Ala	His	Glu	Phe	Leu	Gln	Asn	Phe	Cys	Ala	Gly	Asn
			1235					1240					1245		
Gln	Gln	Asn	Gln	Ala	Leu	Leu	His	Lys	His	Ile	Asn	Leu	Phe	Leu	Asn
			1250					1255				1260			
Pro	Gly	Ile	Leu	Glu	Ala	Val	Thr	Met	Gln	His	Ile	Phe	Met	Asn	Asn
1265						1270				1275					1280
Phe	Gln	Leu	Cys	Ser	Glu	Ile	Asn	Glu	Arg	Val	Val	Gln	His	Phe	Val
						1285				1290					1295

His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
 1300 1305 1310
 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
 1315 1320 1325
 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
 1365 1370 1375
 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
 1380 1385 1390
 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 1395 1400 1405
 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
 1410 1415 1420
 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
 1445 1450 1455
 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
 1460 1465 1470
 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
 1505 1510 1515 1520
 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
 1525 1530 1535
 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
 1540 1545 1550
 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
 1635 1640 1645
 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
 1650 1655 1660
 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
 1685 1690 1695
 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
 1700 1705 1710
 Arg Arg Glu Asp Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
 1715 1720 1725
 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
 1730 1735 1740
 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
 1745 1750 1755 1760
 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
 1765 1770 1775
 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu

1780										1785					1790							
Glu	Gly	Gly	Asn	Thr	Thr	Ile	Gln	His	Ser	Phe	Phe	Cys	Arg	Leu	Thr							
1795										1800					1805							
Glu	Asp	Lys	Lys	Ser	Glu	Lys	Phe	Phe	Lys	Val	Phe	Tyr	Asp	Arg	Met							
1810										1815					1820							
Lys	Val	Ala	Gln	Gln	Glu	Ile	Lys	Ala	Thr	Val	Thr	Val	Asn	Thr	Ser							
1825										1830					1835					1840		
Asp	Leu	Gly	Asn	Lys	Lys	Asp	Asp	Glu	Val	Asp	Arg	Asp	Ala	Pro								
1845										1850					1855							
Ser	Arg	Lys	Lys	Ala	Lys	Glu	Pro	Thr	Thr	Gln	Ile	Thr	Glu	Glu	Val							
1860										1865					1870							
Arg	Asp	Gln	Leu	Leu	Glu	Ala	Ser	Ala	Ala	Thr	Arg	Lys	Ala	Phe	Thr							
1875										1880					1885							
Thr	Phe	Arg	Arg	Glu	Ala	Asp	Pro	Asp	Asp	His	Tyr	Gln	Ser	Gly	Glu							
1890										1895					1900							
Gly	Thr	Gln	Ala	Thr	Thr	Asp	Lys	Ala	Lys	Asp	Asp	Leu	Glu	Met	Ser							
1905										1910					1915					1920		
Ala	Val	Ile	Thr	Ile	Met	Gln	Pro	Ile	Leu	Arg	Phe	Leu	Gln	Leu	Leu							
1925										1930					1935							
Cys	Glu	Asn	His	Asn	Arg	Asp	Leu	Gln	Asn	Phe	Leu	Arg	Cys	Gln	Asn							
1940										1945					1950							
Asn	Lys	Thr	Asn	Tyr	Asn	Leu	Val	Cys	Glu	Thr	Leu	Gln	Phe	Leu	Asp							
1955										1960					1965							
Cys	Ile	Cys	Gly	Ser	Thr	Thr	Gly	Gly	Leu	Gly	Leu	Leu	Gly	Leu	Tyr							
1970										1975					1980							
Ile	Asn	Glu	Lys	Asn	Val	Ala	Leu	Ile	Asn	Gln	Thr	Leu	Glu	Ser	Leu							
1985										1990					1995					2000		
Thr	Glu	Tyr	Cys	Gln	Gly	Pro	Cys	His	Glu	Asn	Gln	Asn	Cys	Ile	Ala							
2005										2010					2015							
Thr	His	Glu	Ser	Asn	Gly	Ile	Asp	Ile	Ile	Thr	Ala	Leu	Ile	Leu	Asn							
2020										2025					2030							
Asp	Ile	Asn	Pro	Leu	Gly	Lys	Lys	Arg	Met	Asp	Leu	Val	Leu	Glu	Leu							
2035										2040					2045							
Lys	Asn	Asn	Ala	Ser	Lys	Leu	Leu	Leu	Ala	Ile	Met	Glu	Ser	Arg	His							
2050										2055					2060							
Asp	Ser	Glu	Asn	Ala	Glu	Arg	Ile	Leu	Tyr	Asn	Met	Arg	Pro	Lys	Glu							
2065										2070					2075					2080		
Leu	Val	Glu	Val	Ile	Lys	Lys	Ala	Tyr	Met	Gln	Gly	Glu	Val	Glu	Phe							
2085										2090					2095							
Glu	Asp	Gly	Glu	Asn	Gly	Glu	Asp	Gly	Ala	Ala	Ser	Pro	Arg	Asn	Val							
2100										2105					2110							
Gly	His	Asn	Ile	Tyr	Ile	Leu	Ala	His	Gln	Leu	Ala	Arg	His	Asn	Lys							
2115										2120					2125							
Glu	Leu	Gln	Thr	Met	Leu	Lys	Pro	Gly	Gly	Gln	Val	Asp	Gly	Asp	Glu							
2130										2135					2140							
Ala	Leu	Glu	Phe	Tyr	Ala	Lys	His	Thr	Ala	Gln	Ile	Glu	Ile	Val	Arg							
2145										2150					2155					2160		
Leu	Asp	Arg	Thr	Met	Glu	Gln	Ile	Val	Phe	Pro	Val	Pro	Ser	Ile	Cys							
2165										2170					2175							
Glu	Phe	Leu	Thr	Lys	Glu	Ser	Lys	Leu	Arg	Ile	Tyr	Tyr	Thr	Thr	Glu							
2180										2185					2190							
Arg	Asp	Glu	Gln	Gly	Ser	Lys	Ile	Asn	Asp	Phe	Phe	Leu	Arg	Ser	Glu							
2195										2200					2205							
Asp	Leu	Phe	Asn	Glu	Met	Asn	Trp	Gln	Lys	Lys	Leu	Arg	Ala	Gln	Pro							
2210										2215					2220							
Val	Leu	Tyr	Trp	Cys	Ala	Arg	Asn	Met	Ser	Phe	Trp	Ser	Ser	Ile	Ser							
2225										2230					2235					2240		
Phe	Asn	Leu	Ala	Val	Leu	Met	Asn	Leu	Leu	Val	Ala	Phe	Phe	Tyr	Pro							
2245										2250					2255							
Phe	Lys	Gly	Val	Arg	Gly	Gly	Thr	Leu	Glu	Pro	His	Trp	Ser	Gly	Leu							
2260										2265					2270							

Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro
 2275 2280 2285
 Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu
 2290 2295 2300
 Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe
 2305 2310 2315 2320
 Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys
 2325 2330 2335
 Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe
 2340 2345 2350
 Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val
 2355 2360 2365
 His Glu Phe Phe Tyr Ser Leu Leu Leu Phe Asp Leu Val Tyr Arg Glu
 2370 2375 2380
 Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
 2385 2390 2395 2400
 Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
 2405 2410 2415
 Ile Val Gly Tyr Leu Phe Phe Lys Asp Asp Phe Ile Leu Glu Val Asp
 2420 2425 2430
 Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
 2435 2440 2445
 Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
 2450 2455 2460
 Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
 2465 2470 2475 2480
 Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
 2485 2490 2495
 Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val
 2500 2505 2510
 Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
 2515 2520 2525
 Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Ile Val Leu Asn Leu
 2530 2535 2540
 Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
 2545 2550 2555 2560
 Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
 2565 2570 2575
 Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
 2580 2585 2590
 Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
 2595 2600 2605
 Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
 2610 2615 2620
 Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
 2625 2630 2635 2640
 Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
 2645 2650 2655
 Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
 2660 2665 2670
 Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
 2675 2680 2685
 Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
 2690 2695 2700
 Asn Pro Gln Gln Pro Ala
 2705 2710

<210> 8

<211> 2749

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
synthetic construct

<400> 8

Met	Ser	Asp	Lys	Met	Ser	Ser	Phe	Leu	His	Ile	Gly	Asp	Ile	Cys	Ser	1	5	10	15
Leu	Tyr	Ala	Glu	Gly	Ser	Thr	Asn	Gly	Phe	Ile	Ser	Thr	Leu	Gly	Leu	20	25	30	
Val	Asp	Asp	Arg	Cys	Val	Val	Gln	Pro	Glu	Ala	Gly	Asp	Leu	Asn	Asn	35	40	45	
Pro	Pro	Lys	Lys	Phe	Arg	Asp	Cys	Leu	Phe	Lys	Leu	Cys	Pro	Met	Asn	50	55	60	
Arg	Tyr	Ser	Ala	Gln	Lys	Gln	Phe	Trp	Lys	Ala	Ala	Lys	Pro	Gly	Ala	65	70	75	80
Asn	Ser	Thr	Thr	Asp	Ala	Val	Leu	Leu	Asn	Lys	Leu	His	His	Ala	Ala	85	90	95	
Asp	Leu	Glu	Lys	Lys	Gln	Asn	Glu	Thr	Glu	Asn	Arg	Lys	Leu	Leu	Gly	100	105	110	
Thr	Val	Ile	Gln	Tyr	Gly	Asn	Val	Ile	Gln	Leu	Leu	His	Leu	Lys	Ser	115	120	125	
Asn	Lys	Tyr	Leu	Thr	Val	Asn	Lys	Arg	Leu	Pro	Ala	Leu	Leu	Glu	Lys	130	135	140	
Asn	Ala	Met	Arg	Val	Thr	Leu	Asp	Glu	Ala	Gly	Asn	Glu	Gly	Ser	Trp	145	150	155	160
Phe	Tyr	Ile	Gln	Pro	Phe	Tyr	Lys	Leu	Arg	Ser	Ile	Gly	Asp	Ser	Val	165	170	175	
Val	Ile	Gly	Asp	Lys	Val	Val	Leu	Asn	Pro	Val	Asn	Ala	Gly	Gln	Pro	180	185	190	
Leu	His	Ala	Ser	Ser	His	Gln	Leu	Val	Asp	Asn	Pro	Gly	Cys	Asn	Glu	195	200	205	
Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Val	Leu	Phe	Met	210	215	220	
Lys	Trp	Ser	Asp	Asn	Lys	Asp	Asp	Ile	Leu	Lys	Gly	Gly	Asp	Val	Val	225	230	235	240
Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His	245	250	255	
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala	260	265	270	
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln	275	280	285	
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg	290	295	300	
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro	305	310	315	320
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp	325	330	335	
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg	Asn	Ala	Gln	Glu	Lys	Met	Val	340	345	350	
Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe	355	360	365	
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg	370	375	380	
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His	385	390	395	400
Ser	Thr	Asn	Ile	Pro	Ile	Asp	Lys	Glu	Glu	Glu	Lys	Pro	Val	Met	Leu	405	410	415	
Lys	Ile	Gly	Thr	Ser	Pro	Leu	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile				

Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
 915 920 925
 Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Gly Phe Leu Pro Met
 930 935 940
 Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
 945 950 955 960
 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
 965 970 975
 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
 980 985 990
 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
 995 1000 1005
 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
 1010 1015 1020
 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
 1025 1030 1035 1040
 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
 1045 1050 1055
 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
 1060 1065 1070
 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
 1075 1080 1085
 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
 1090 1095 1100
 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
 1105 1110 1115 1120

 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
 1125 1130 1135
 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
 1140 1145 1150
 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
 1155 1160 1165
 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
 1170 1175 1180
 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
 1185 1190 1195 1200
 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
 1205 1210 1215
 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
 1220 1225 1230
 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
 1235 1240 1245
 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
 1250 1255 1260
 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
 1265 1270 1275 1280
 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
 1285 1290 1295
 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
 1300 1305 1310
 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
 1315 1320 1325
 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
 1365 1370 1375
 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
 1380 1385 1390

Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 1395 1400 1405
 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
 1410 1415 1420
 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
 1445 1450 1455
 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
 1460 1465 1470
 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
 1505 1510 1515 1520
 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
 1525 1530 1535
 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
 1540 1545 1550
 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
 1635 1640 1645
 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
 1650 1655 1660
 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
 1685 1690 1695
 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn
 1700 1705 1710
 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
 1715 1720 1725
 His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
 1730 1735 1740
 Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Asp Leu Thr Ser Phe Gly
 1745 1750 1755 1760
 Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly
 1765 1770 1775
 Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
 1780 1785 1790
 Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
 1795 1800 1805
 Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
 1810 1815 1820
 Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His
 1825 1830 1835 1840
 Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe
 1845 1850 1855
 Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala
 1860 1865 1870
 Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp

1875				1880				1885							
Glu	Val	Asp	Arg	Asp	Ala	Pro	Ser	Arg	Lys	Lys	Ala	Lys	Glu	Pro	Thr
1890				1895				1900							
Thr	Gln	Ile	Thr	Glu	Glu	Val	Arg	Asp	Gln	Leu	Leu	Glu	Ala	Ser	Ala
1905				1910				1915				1920			
Ala	Thr	Arg	Lys	Ala	Phe	Thr	Thr	Phe	Arg	Arg	Glu	Ala	Asp	Pro	Asp
1925				1930				1935							
Asp	His	Tyr	Gln	Ser	Gly	Glu	Gly	Thr	Gln	Ala	Thr	Thr	Asp	Lys	Ala
1940				1945				1950							
Lys	Asp	Asp	Leu	Glu	Met	Ser	Ala	Val	Ile	Thr	Ile	Met	Gln	Pro	Ile
1955				1960				1965							
Leu	Arg	Phe	Leu	Gln	Leu	Leu	Cys	Glu	Asn	His	Asn	Arg	Asp	Leu	Gln
1970				1975				1980							
Asn	Phe	Leu	Arg	Cys	Gln	Asn	Asn	Lys	Thr	Asn	Tyr	Asn	Leu	Val	Cys
1985				1990				1995				2000			
Glu	Thr	Leu	Gln	Phe	Leu	Asp	Cys	Ile	Cys	Gly	Ser	Thr	Thr	Gly	Gly
2005				2010				2015							
Leu	Gly	Leu	Leu	Gly	Leu	Tyr	Ile	Asn	Glu	Lys	Asn	Val	Ala	Leu	Ile
2020				2025				2030							
Asn	Gln	Thr	Leu	Glu	Ser	Leu	Thr	Glu	Tyr	Cys	Gln	Gly	Pro	Cys	His
2035				2040				2045							
Glu	Asn	Gln	Asn	Cys	Ile	Ala	Thr	His	Glu	Ser	Asn	Gly	Ile	Asp	Ile
2050				2055				2060							
Ile	Thr	Ala	Leu	Ile	Leu	Asn	Asp	Ile	Asn	Pro	Leu	Gly	Lys	Lys	Arg
2065				2070				2075				2080			
Met	Asp	Leu	Val	Leu	Glu	Leu	Lys	Asn	Asn	Ala	Ser	Lys	Leu	Leu	Leu
2085				2090				2095							
Ala	Ile	Met	Glu	Ser	Arg	His	Asp	Ser	Glu	Asn	Ala	Glu	Arg	Ile	Leu
2100				2105				2110							
Tyr	Asn	Met	Arg	Pro	Lys	Glu	Leu	Val	Glu	Val	Ile	Lys	Lys	Ala	Tyr
2115				2120				2125							
Met	Gln	Gly	Glu	Val	Glu	Phe	Glu	Asp	Gly	Glu	Asn	Gly	Glu	Asp	Gly
2130				2135				2140							
Ala	Ala	Ser	Pro	Arg	Asn	Val	Gly	His	Asn	Ile	Tyr	Ile	Leu	Ala	His
2145				2150				2155				2160			
Gln	Leu	Ala	Arg	His	Asn	Lys	Glu	Leu	Gln	Thr	Met	Leu	Lys	Pro	Gly
2165				2170				2175							
Gly	Gln	Val	Asp	Gly	Asp	Glu	Ala	Leu	Glu	Phe	Tyr	Ala	Lys	His	Thr
2180				2185				2190							
Ala	Gln	Ile	Glu	Ile	Val	Arg	Leu	Asp	Arg	Thr	Met	Glu	Gln	Ile	Val
2195				2200				2205							
Phe	Pro	Val	Pro	Ser	Ile	Cys	Glu	Phe	Leu	Thr	Lys	Glu	Ser	Lys	Leu
2210				2215				2220							
Arg	Ile	Tyr	Tyr	Thr	Thr	Glu	Arg	Asp	Glu	Gln	Gly	Ser	Lys	Ile	Asn
2225				2230				2235				2240			
Asp	Phe	Phe	Leu	Arg	Ser	Glu	Asp	Leu	Phe	Asn	Glu	Met	Asn	Trp	Gln
2245				2250				2255							
Lys	Lys	Leu	Arg	Ala	Gln	Pro	Val	Leu	Tyr	Trp	Cys	Ala	Arg	Asn	Met
2260				2265				2270							
Ser	Phe	Trp	Ser	Ser	Ile	Ser	Phe	Asn	Leu	Ala	Val	Leu	Met	Asn	Leu
2275				2280				2285							
Leu	Val	Ala	Phe	Phe	Tyr	Pro	Phe	Lys	Gly	Val	Arg	Gly	Gly	Thr	Leu
2290				2295				2300							
Glu	Pro	His	Trp	Ser	Gly	Leu	Leu	Trp	Thr	Ala	Met	Leu	Ile	Ser	Leu
2305				2310				2315				2320			
Ala	Ile	Val	Ile	Ala	Leu	Pro	Lys	Pro	His	Gly	Ile	Arg	Ala	Leu	Ile
2325				2330				2335							
Ala	Ser	Thr	Ile	Leu	Arg	Leu	Ile	Phe	Ser	Val	Gly	Leu	Gln	Pro	Thr
2340				2345				2350							
Leu	Phe	Leu	Gly	Ala	Phe	Asn	Val	Cys	Asn	Lys	Ile	Ile	Phe	Leu	
2355				2360				2365							

Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala
 2370 2375 2380
 Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile
 2385 2390 2395 2400
 Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu
 2405 2410 2415
 Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser
 2420 2425 2430
 Val Thr Arg Asn Gly Arg Pro Ile Leu Thr Ala Ala Leu Ala Leu
 2435 2440 2445
 Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
 2450 2455 2460
 Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
 2465 2470 2475 2480
 Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
 2485 2490 2495
 Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu
 2500 2505 2510
 Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu
 2515 2520 2525
 Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser
 2530 2535 2540
 Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro
 2545 2550 2555 2560
 Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Phe Met Val
 2565 2570 2575
 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
 2580 2585 2590
 Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
 2595 2600 2605
 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
 2610 2615 2620
 Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
 2625 2630 2635 2640
 Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
 2645 2650 2655
 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
 2660 2665 2670
 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
 2675 2680 2685
 Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
 2690 2695 2700
 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
 2705 2710 2715 2720
 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
 2725 2730 2735
 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
 2740 2745

<210> 9

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 9

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser

1	5	10	15
Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu			
20	25	30	
Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn			
35	40	45	
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn			
50	55	60	
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala			
65	70	75	80
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala			
85	90	95	
Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly			
100	105	110	
Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser			
115	120	125	
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys			
130	135	140	
Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp			
145	150	155	160
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val			
165	170	175	
Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro			
180	185	190	
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu			
195	200	205	
Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met			
210	215	220	
Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val			
225	230	235	240
Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His			
245	250	255	
Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala			
260	265	270	
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln			
275	280	285	
His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg			
290	295	300	
Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro			
305	310	315	320
Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp			
325	330	335	
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val			
340	345	350	
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe			
355	360	365	
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg			
370	375	380	
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His			
385	390	395	400
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu			
405	410	415	
Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile			
420	425	430	
Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp			
435	440	445	
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr			
450	455	460	
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu			
465	470	475	480
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu			
485	490	495	

Val	Val	Phe	Ser	Lys	Pro	Asn	Arg	Glu	Arg	Gln	Lys	Leu	Met	Arg	Glu	
			500					505					510			
Gln	Asn	Ile	Leu	Lys	Gln	Ile	Phe	Lys	Leu	Leu	Gln	Ala	Pro	Phe	Thr	
		515					520					525				
Asp	Cys	Gly	Asp	Gly	Pro	Met	Leu	Arg	Leu	Glu	Glu	Leu	Gly	Asp	Gln	
	530					535					540					
Arg	His	Ala	Pro	Phe	Arg	His	Ile	Cys	Arg	Leu	Cys	Tyr	Arg	Val	Leu	
545					550					555					560	
Arg	His	Ser	Gln	Gln	Asp	Tyr	Arg	Lys	Asn	Gln	Glu	Tyr	Ile	Ala	Lys	
			565						570					575		
Gln	Phe	Gly	Phe	Met	Gln	Lys	Gln	Ile	Gly	Tyr	Asp	Val	Leu	Ala	Glu	
		580					585					590				
Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys	
	595						600					605				
His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys	
	610					615					620					
Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser	
625					630					635					640	
Met	Asn	Lys	Ser	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Ala	Val	
			645						650					655		
Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Ile	Glu	Thr	Lys	Leu	Val	Leu	
	660							665					670			
Ser	Arg	Phe	Glu	Phe	Glu	Gly	Val	Ser	Thr	Gly	Glu	Asn	Ala	Leu	Glu	
	675					680						685				
Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn	
	690					695					700					
Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys	
705					710					715					720	
Glu	Gly	Gln	Lys	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln	
			725						730					735		
Leu	Asn	Leu	Phe	Ala	Arg	Met	Cys	Leu	Asp	Arg	Gln	Tyr	Leu	Ala	Ile	
	740							745					750			
Asn	Glu	Ile	Ser	Gly	Gln	Leu	Asp	Val	Asp	Leu	Ile	Leu	Arg	Cys	Met	
	755						760					765				
Ser	Asp	Glu	Asn	Leu	Pro	Tyr	Asp	Leu	Arg	Ala	Ser	Phe	Cys	Arg	Leu	
	770					775					780					
Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro	
785					790					795					800	
Val	Lys	Tyr	Ala	Arg	Leu	Trp	Ser	Glu	Ile	Pro	Ser	Glu	Ile	Ala	Ile	
			805						810					815		
Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg	
			820					825					830			
Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arg	Asp	Val	Val	
		835					840					845				
Cys	Gln	Arg	Phe	Pro	Phe	Ser	Asp	Lys	Glu	Lys	Asn	Lys	Leu	Thr	Phe	
	850					855					860					
Glu	Val	Val	Asn	Leu	Ala	Arg	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Asn	
865					870					875					880	
Phe	Ser	Asp	Leu	Leu	Arg	Leu	Thr	Lys	Ile	Leu	Leu	Ala	Ile	Leu	Asp	
			885						890					895		
Cys	Val	His	Val	Thr	Thr	Ile	Phe	Pro	Ile	Ser	Lys	Met	Thr	Lys	Gly	
		900						905					910			
Glu	Glu	Asn	Lys	Gly	Ser	Asn	Val	Met	Arg	Ser	Ile	His	Gly	Val	Gly	
		915					920					925				
Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met	
	930					935					940					
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro	
945					950					955					960	
Glu	Lys	Glu	Asp	Ile	Met	Val	Met	Asp	Thr	Lys	Leu	Lys	Ile	Ile	Glu	
			965						970					975		
Ile	Leu	Gln	Phe	Ile	Leu	Asn	Val	Arg	Leu	Asp	Tyr	Arg	Ile	Ser	Cys	

980					985					990						
Leu	Leu	Cys	Ile	Phe	Lys	Arg	Glu	Phe	Asp	Glu	Ser	Asn	Ser	Gln	Ser	
995					1000					1005						
Ser	Glu	Thr	Ser	Ser	Gly	Asn	Ser	Ser	Gln	Glu	Gly	Pro	Ser	Asn	Val	
1010					1015					1020						
Pro	Gly	Ala	Leu	Asp	Phe	Glu	His	Ile	Glu	Gln	Ala	Glu	Gly	Ile		
1025					1030					1035					1040	
Phe	Gly	Gly	Ser	Glu	Asn	Thr	Pro	Leu	Asp	Leu	Asp	Asp	His	Gly		
1045					1050					1055						
Gly	Arg	Thr	Phe	Leu	Arg	Val	Leu	Leu	His	Leu	Thr	Met	His	Asp	Tyr	
1060					1065					1070						
Pro	Pro	Leu	Val	Ser	Gly	Ala	Leu	Gln	Leu	Leu	Phe	Arg	His	Phe	Ser	
1075					1080					1085						
Gln	Arg	Gln	Glu	Val	Leu	Gln	Ala	Phe	Lys	Gln	Val	Gln	Leu	Leu	Val	
1090					1095					1100						
Thr	Ser	Gln	Asp	Val	Asp	Asn	Tyr	Lys	Gln	Ile	Lys	Gln	Asp	Leu	Asp	
1105					1110					1115					1120	
Gln	Leu	Arg	Ser	Ile	Val	Glu	Lys	Ser	Glu	Leu	Trp	Val	Tyr	Lys	Gly	
1125					1130					1135						
Gln	Gly	Pro	Asp	Glu	Pro	Met	Asp	Gly	Ala	Ser	Gly	Glu	Asn	Glu	His	
1140					1145					1150						
Lys	Lys	Thr	Glu	Glu	Gly	Thr	Ser	Lys	Pro	Leu	Lys	His	Glu	Ser	Thr	
1155					1160					1165						
Ser	Ser	Tyr	Asn	Tyr	Arg	Val	Val	Lys	Glu	Ile	Leu	Ile	Arg	Leu	Ser	
1170					1175					1180						
Lys	Leu	Cys	Val	Gln	Glu	Ser	Ala	Ser	Val	Arg	Lys	Ser	Arg	Lys	Gln	
1185					1190					1195					1200	
Gln	Gln	Arg	Leu	Leu	Arg	Asn	Met	Gly	Ala	His	Ala	Val	Val	Leu	Glu	
1205					1210					1215						
Leu	Leu	Gln	Ile	Pro	Tyr	Glu	Lys	Ala	Glu	Asp	Thr	Lys	Met	Gln	Glu	
1220					1225					1230						
Ile	Met	Arg	Leu	Ala	His	Glu	Phe	Leu	Gln	Asn	Phe	Cys	Ala	Gly	Asn	
1235					1240					1245						
Gln	Gln	Asn	Gln	Ala	Leu	Leu	His	Lys	His	Ile	Asn	Leu	Phe	Leu	Asn	
1250					1255					1260						
Pro	Gly	Ile	Leu	Glu	Ala	Val	Thr	Met	Gln	His	Ile	Phe	Met	Asn	Asn	
1265					1270					1275					1280	
Phe	Gln	Leu	Cys	Ser	Glu	Ile	Asn	Glu	Arg	Val	Val	Gln	His	Phe	Val	
1285					1290					1295						
His	Cys	Ile	Glu	Thr	His	Gly	Arg	Asn	Val	Gln	Tyr	Ile	Lys	Phe	Leu	
1300					1305					1310						
Gln	Thr	Ile	Val	Lys	Ala	Glu	Gly	Lys	Phe	Ile	Lys	Lys	Cys	Gln	Asp	
1315					1320					1325						
Met	Val	Met	Ala	Glu	Leu	Val	Asn	Ser	Gly	Glu	Asp	Val	Leu	Val	Phe	
1330					1335					1340						
Tyr	Asn	Asp	Arg	Ala	Ser	Phe	Gln	Thr	Leu	Ile	Gln	Met	Met	Arg	Ser	
1345					1350					1355					1360	
Glu	Arg	Asp	Arg	Met	Asp	Glu	Asn	Ser	Pro	Leu	Phe	Met	Tyr	His	Ile	
1365					1370					1375						
His	Leu	Val	Glu	Leu	Leu	Ala	Val	Cys	Thr	Glu	Gly	Lys	Asn	Val	Tyr	
1380					1385					1390						
Thr	Glu	Ile	Lys	Cys	Asn	Ser	Leu	Leu	Pro	Leu	Asp	Asp	Ile	Val	Arg	
1395					1400					1405						
Val	Val	Thr	His	Glu	Asp	Cys	Ile	Pro	Glu	Val	Lys	Ile	Ala	Tyr	Ile	
1410					1415					1420						
Asn	Phe	Leu	Asn	His	Cys	Tyr	Val	Asp	Thr	Glu	Val	Glu	Met	Lys	Glu	
1425					1430					1435					1440	
Ile	Tyr	Thr	Ser	Asn	His	Met	Trp	Lys	Leu	Phe	Glu	Asn	Phe	Leu	Val	
1445					1450					1455						
Asp	Ile	Cys	Arg	Ala	Cys	Asn	Asn	Thr	Ser	Asp	Arg	Lys	His	Ala	Asp	
1460					1465					1470						

Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
 1505 1510 1515 1520
 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
 1525 1530 1535
 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
 1540 1545 1550
 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
 1635 1640 1645
 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
 1650 1655 1660
 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
 1685 1690 1695
 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
 1700 1705 1710
 Arg Arg Glu Glu Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
 1715 1720 1725
 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
 1730 1735 1740
 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
 1745 1750 1755 1760
 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
 1765 1770 1775
 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
 1780 1785 1790
 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
 1795 1800 1805
 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
 1810 1815 1820
 Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
 1825 1830 1835 1840
 Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
 1845 1850 1855
 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
 1860 1865 1870
 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
 1875 1880 1885
 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
 1890 1895 1900
 Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
 1905 1910 1915 1920
 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu
 1925 1930 1935
 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
 1940 1945 1950
 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp

1955					1960					1965						
Cys	Ile	Cys	Gly	Ser	Thr	Thr	Gly	Gly	Leu	Gly	Leu	Leu	Gly	Leu	Tyr	
1970					1975					1980						
Ile	Asn	Glu	Lys	Asn	Val	Ala	Leu	Ile	Asn	Gln	Thr	Leu	Glu	Ser	Leu	
1985					1990					1995					2000	
Thr	Glu	Tyr	Cys	Gln	Gly	Pro	Cys	His	Glu	Asn	Gln	Asn	Cys	Ile	Ala	
2005					2010					2015						
Thr	His	Glu	Ser	Asn	Gly	Ile	Asp	Ile	Ile	Thr	Ala	Leu	Ile	Leu	Asn	
2020					2025					2030						
Asp	Ile	Asn	Pro	Leu	Gly	Lys	Lys	Arg	Met	Asp	Leu	Val	Leu	Glu	Leu	
2035					2040					2045						
Lys	Asn	Asn	Ala	Ser	Lys	Leu	Leu	Leu	Ala	Ile	Met	Glu	Ser	Arg	His	
2050					2055					2060						
Asp	Ser	Glu	Asn	Ala	Glu	Arg	Ile	Leu	Tyr	Asn	Met	Arg	Pro	Lys	Glu	
2065					2070					2075					2080	
Leu	Val	Glu	Val	Ile	Lys	Lys	Ala	Tyr	Met	Gln	Gly	Glu	Val	Glu	Phe	
2085					2090					2095						
Glu	Asp	Gly	Glu	Asn	Gly	Glu	Asp	Gly	Ala	Ala	Ser	Pro	Arg	Asn	Val	
2100					2105					2110						
Gly	His	Asn	Ile	Tyr	Ile	Leu	Ala	His	Gln	Leu	Ala	Arg	His	Asn	Lys	
2115					2120					2125						
Glu	Leu	Gln	Thr	Met	Leu	Lys	Pro	Gly	Gly	Gln	Val	Asp	Gly	Asp	Glu	
2130					2135					2140						
Ala	Leu	Glu	Phe	Tyr	Ala	Lys	His	Thr	Ala	Gln	Ile	Glu	Ile	Val	Arg	
2145					2150					2155					2160	
Leu	Asp	Arg	Thr	Met	Glu	Gln	Ile	Val	Phe	Pro	Val	Pro	Ser	Ile	Cys	
2165					2170					2175						
Glu	Phe	Leu	Thr	Lys	Glu	Ser	Lys	Leu	Arg	Ile	Tyr	Tyr	Thr	Thr	Glu	
2180					2185					2190						
Arg	Asp	Glu	Gln	Gly	Ser	Lys	Ile	Asn	Asp	Phe	Phe	Leu	Arg	Ser	Glu	
2195					2200					2205						
Asp	Leu	Phe	Asn	Glu	Met	Asn	Trp	Gln	Lys	Lys	Leu	Arg	Ala	Gln	Pro	
2210					2215					2220						
Val	Leu	Tyr	Trp	Cys	Ala	Arg	Asn	Met	Ser	Phe	Trp	Ser	Ser	Ile	Ser	
2225					2230					2235					2240	
Phe	Asn	Leu	Ala	Val	Leu	Met	Asn	Leu	Leu	Val	Ala	Phe	Phe	Tyr	Pro	
2245					2250					2255						
Phe	Lys	Gly	Val	Arg	Gly	Gly	Thr	Leu	Glu	Pro	His	Trp	Ser	Gly	Leu	
2260					2265					2270						
Leu	Trp	Thr	Ala	Met	Leu	Ile	Ser	Leu	Ala	Ile	Val	Ile	Ala	Leu	Pro	
2275					2280					2285						
Lys	Pro	His	Gly	Ile	Arg	Ala	Leu	Ile	Ala	Ser	Thr	Ile	Leu	Arg	Leu	
2290					2295					2300						
Ile	Phe	Ser	Val	Gly	Leu	Gln	Pro	Thr	Leu	Phe	Leu	Leu	Gly	Ala	Phe	
2305					2310					2315					2320	
Asn	Val	Cys	Asn	Lys	Ile	Ile	Phe	Leu	Met	Ser	Phe	Val	Gly	Asn	Cys	
2325					2330					2335						
Gly	Thr	Phe	Thr	Arg	Gly	Tyr	Arg	Ala	Met	Val	Leu	Asp	Val	Glu	Phe	
2340					2345					2350						
Leu	Tyr	His	Leu	Leu	Tyr	Leu	Leu	Ile	Cys	Ala	Met	Gly	Leu	Phe	Val	
2355					2360					2365						
His	Glu	Phe	Phe	Tyr	Ser	Leu	Leu	Phe	Asp	Leu	Val	Tyr	Arg	Glu		
2370					2375					2380						
Glu	Thr	Leu	Leu	Asn	Val	Ile	Lys	Ser	Val	Thr	Arg	Asn	Gly	Arg	Pro	
2385					2390					2395					2400	
Ile	Ile	Leu	Thr	Ala	Ala	Leu	Ala	Leu	Ile	Leu	Val	Tyr	Leu	Phe	Ser	
2405					2410					2415						
Ile	Val	Gly	Tyr	Leu	Phe	Phe	Lys	Asp	Asp	Phe	Ile	Leu	Glu	Val	Asp	
2420					2425					2430						
Arg	Leu	Pro	Asn	Glu	Thr	Ala	Gly	Pro	Glu	Thr	Gly	Glu	Ser	Leu	Ala	
2435					2440					2445						

Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
 2450 2455 2460
 Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
 2465 2470 2475 2480
 Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
 2485 2490 2495
 Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val
 2500 2505 2510
 Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
 2515 2520 2525
 Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Ile Val Leu Asn Leu
 2530 2535 2540
 Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
 2545 2550 2555 2560
 Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
 2565 2570 2575
 Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
 2580 2585 2590
 Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
 2595 2600 2605
 Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
 2610 2615 2620
 Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
 2625 2630 2635 2640
 Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
 2645 2650 2655
 Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
 2660 2665 2670
 Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
 2675 2680 2685
 Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
 2690 2695 2700
 Asn Pro Gln Gln Pro Ala
 2705 2710

<210> 10

<211> 2749

<212> PRT

<213> Artificial Sequence

<220>

 <223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 10

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser
 1 5 10 15
 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
 20 25 30
 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
 35 40 45
 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
 50 55 60
 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
 65 70 75 80
 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
 85 90 95
 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
 100 105 110
 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser

115	120	125
Asn Lys Tyr Leu Thr Val	Asn Lys Arg Leu Pro	Ala Leu Leu Glu Lys
130	135	140
Asn Ala Met Arg Val Thr	Leu Asp Glu Ala Gly	Asn Glu Gly Ser Trp
145	150	155
Phe Tyr Ile Gln Pro Phe	Tyr Lys Leu Arg Ser	Ile Gly Asp Ser Val
165	170	175
Val Ile Gly Asp Lys Val	Val Leu Asn Pro Val	Asn Ala Gly Gln Pro
180	185	190
Leu His Ala Ser Ser His	Gln Leu Val Asp Asn	Pro Gly Cys Asn Glu
195	200	205
Val Asn Ser Val Asn Cys	Asn Thr Ser Trp Lys	Ile Val Leu Phe Met
210	215	220
Lys Trp Ser Asp Asn Lys	Asp Asp Ile Leu Lys	Gly Gly Asp Val Val
225	230	235
Arg Leu Phe His Ala Glu	Gln Glu Lys Phe Leu	Thr Cys Asp Glu His
245	250	255
Arg Lys Lys Gln His Val	Phe Leu Arg Thr Thr	Gly Arg Gln Ser Ala
260	265	270
Thr Ser Ala Thr Ser Ser	Lys Ala Leu Trp Glu	Val Glu Val Val Gln
275	280	285
His Asp Pro Cys Arg Gly	Gly Ala Gly Tyr Trp	Asn Ser Leu Phe Arg
290	295	300
Phe Lys His Leu Ala Thr	Gly His Tyr Leu Ala	Ala Glu Val Asp Pro
305	310	315
Asp Phe Glu Glu Glu Cys	Leu Glu Phe Gln Pro	Ser Val Asp Pro Asp
325	330	335
Gln Asp Ala Ser Arg Ser	Arg Leu Arg Asn Ala	Gln Glu Lys Met Val
340	345	350
Tyr Ser Leu Val Ser Val	Pro Glu Gly Asn Asp	Ile Ser Ser Ile Phe
355	360	365
Glu Leu Asp Pro Thr Thr	Leu Arg Gly Gly Asp	Ser Leu Val Pro Arg
370	375	380
Asn Ser Tyr Val Arg Leu	Arg His Leu Cys Thr	Asn Thr Trp Val His
385	390	395
Ser Thr Asn Ile Pro Ile	Asp Lys Glu Glu Lys	Pro Val Met Leu
405	410	415
Lys Ile Gly Thr Ser Pro	Leu Lys Glu Asp Lys	Glu Ala Phe Ala Ile
420	425	430
Val Pro Val Ser Pro Ala	Glu Val Arg Asp Leu	Asp Phe Ala Asn Asp
435	440	445
Ala Ser Lys Val Leu Gly	Ser Ile Ala Gly Lys	Leu Glu Lys Gly Thr
450	455	460
Ile Thr Gln Asn Glu Arg	Arg Ser Val Thr Lys	Leu Leu Glu Asp Leu
465	470	475
Val Tyr Phe Val Thr Gly	Gly Thr Asn Ser Gly	Gln Asp Val Leu Glu
485	490	495
Val Val Phe Ser Lys Pro	Asn Arg Glu Arg Gln	Lys Leu Met Arg Glu
500	505	510
Gln Asn Ile Leu Lys Gln	Ile Phe Lys Leu Leu	Gln Ala Pro Phe Thr
515	520	525
Asp Cys Gly Asp Gly Pro	Met Leu Arg Leu Glu	Glu Leu Gly Asp Gln
530	535	540
Arg His Ala Pro Phe Arg	His Ile Cys Arg Leu	Cys Tyr Arg Val Leu
545	550	555
Arg His Ser Gln Gln Asp	Tyr Arg Lys Asn Gln	Glu Tyr Ile Ala Lys
565	570	575
Gln Phe Gly Phe Met Gln	Lys Gln Ile Gly Tyr	Asp Val Leu Ala Glu
580	585	590
Asp Thr Ile Thr Ala Leu	Leu Leu His Asn Asn	Arg Lys Leu Leu Glu Lys
595	600	605

His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys
610						615					620				
Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser
625					630					635					640
Met	Asn	Lys	Ser	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Ala	Val
				645					650					655	
Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Ile	Glu	Thr	Lys	Leu	Val	Leu
			660				665						670		
Ser	Arg	Phe	Glu	Phe	Glu	Gly	Val	Ser	Thr	Gly	Glu	Asn	Ala	Leu	Glu
		675				680					685				
Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn
690					695					700					
Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys
705					710					715					720
Glu	Gly	Gln	Lys	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln
			725						730					735	
Leu	Asn	Leu	Phe	Ala	Arg	Met	Cys	Leu	Asp	Arg	Gln	Tyr	Leu	Ala	Ile
			740				745						750		
Asn	Glu	Ile	Ser	Gly	Gln	Leu	Asp	Val	Asp	Leu	Ile	Leu	Arg	Cys	Met
			755				760						765		
Ser	Asp	Glu	Asn	Leu	Pro	Tyr	Asp	Leu	Arg	Ala	Ser	Phe	Cys	Arg	Leu
770						775					780				
Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro
785					790					795					800
Val	Lys	Tyr	Ala	Arg	Leu	Trp	Ser	Glu	Ile	Pro	Ser	Glu	Ile	Ala	Ile
				805					810					815	
Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg
			820				825						830		
Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arg	Asp	Val	Val
			835				840						845		
Cys	Gln	Arg	Phe	Pro	Phe	Ser	Asp	Lys	Glu	Lys	Asn	Lys	Leu	Thr	Phe
850					855					860					
Glu	Val	Val	Asn	Leu	Ala	Arg	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Asn
865					870					875					880
Phe	Ser	Asp	Leu	Leu	Arg	Leu	Thr	Lys	Ile	Leu	Leu	Ala	Ile	Leu	Asp
			885						890					895	
Cys	Val	His	Val	Thr	Thr	Ile	Phe	Pro	Ile	Ser	Lys	Met	Thr	Lys	Gly
			900					905					910		
Glu	Glu	Asn	Lys	Gly	Ser	Asn	Val	Met	Arg	Ser	Ile	His	Gly	Val	Gly
		915					920					925			
Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met
930						935					940				
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro
945					950						955				960
Glu	Lys	Glu	Asp	Ile	Met	Val	Met	Asp	Thr	Lys	Leu	Lys	Ile	Ile	Glu
			965						970					975	
Ile	Leu	Gln	Phe	Ile	Leu	Asn	Val	Arg	Leu	Asp	Tyr	Arg	Ile	Ser	Cys
			980					985					990		
Leu	Leu	Cys	Ile	Phe	Lys	Arg	Glu	Phe	Asp	Glu	Ser	Asn	Ser	Gln	Ser
		995					1000					1005			
Ser	Glu	Thr	Ser	Ser	Gly	Asn	Ser	Ser	Gln	Glu	Gly	Pro	Ser	Asn	Val
1010						1015					1020				
Pro	Gly	Ala	Leu	Asp	Phe	Glu	His	Ile	Glu	Glu	Gln	Ala	Glu	Gly	Ile
1025					1030						1035				1040
Phe	Gly	Gly	Ser	Glu	Glu	Asn	Thr	Pro	Leu	Asp	Leu	Asp	Asp	His	Gly
			1045						1050					1055	
Gly	Arg	Thr	Phe	Leu	Arg	Val	Leu	Leu	His	Leu	Thr	Met	His	Asp	Tyr
			1060					1065					1070		
Pro	Pro	Leu	Val	Ser	Gly	Ala	Leu	Gln	Leu	Leu	Phe	Arg	His	Phe	Ser
		1075					1080					1085			
Gln	Arg	Gln	Glu	Val	Leu	Gln	Ala	Phe	Lys	Gln	Val	Gln	Leu	Leu	Val

1090	1095	1100
Thr Ser Gln Asp Val	Asp Asn Tyr Lys Gln	Ile Lys Gln Asp Leu Asp
1105	1110	1115 1120
Gln Leu Arg Ser Ile Val	Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly	
1125	1130	1135
Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His		
1140	1145	1150
Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr		
1155	1160	1165
Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser		
1170	1175	1180
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln		
1185	1190	1195 1200
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu		
1205	1210	1215
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu		
1220	1225	1230
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn		
1235	1240	1245
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn		
1250	1255	1260
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn		
1265	1270	1275 1280
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val		
1285	1290	1295
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu		
1300	1305	1310
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp		
1315	1320	1325
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe		
1330	1335	1340
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser		
1345	1350	1355 1360
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile		
1365	1370	1375
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr		
1380	1385	1390
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg		
1395	1400	1405
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile		
1410	1415	1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu		
1425	1430	1435 1440
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val		
1445	1450	1455
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp		
1460	1465	1470
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr		
1475	1480	1485
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr		
1490	1495	1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr		
1505	1510	1515 1520
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys		
1525	1530	1535
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro		
1540	1545	1550
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn		
1555	1560	1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala		
1570	1575	1580

Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
 1635 1640 1645
 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
 1650 1655 1660
 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
 1685 1690 1695
 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn
 1700 1705 1710
 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
 1715 1720 1725
 His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
 1730 1735 1740
 Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Glu Leu Thr Ser Phe Gly
 1745 1750 1755 1760
 Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly
 1765 1770 1775
 Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
 1780 1785 1790
 Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
 1795 1800 1805
 Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
 1810 1815 1820
 Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His
 1825 1830 1835 1840
 Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe
 1845 1850 1855
 Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala
 1860 1865 1870
 Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp
 1875 1880 1885
 Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr
 1890 1895 1900
 Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala
 1905 1910 1915 1920
 Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp
 1925 1930 1935
 Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala
 1940 1945 1950
 Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile
 1955 1960 1965
 Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln
 1970 1975 1980
 Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys
 1985 1990 1995 2000
 Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly
 2005 2010 2015
 Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile
 2020 2025 2030
 Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
 2035 2040 2045
 Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile
 2050 2055 2060
 Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg

2065		2070		2075		2080
Met Asp Leu Val	Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu					
	2085		2090			2095
Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu						
	2100		2105			2110
Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr						
	2115		2120			2125
Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly						
	2130		2135			2140
Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His						
2145		2150		2155		2160
Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly						
	2165		2170			2175
Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr						
	2180		2185			2190
Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val						
	2195		2200			2205
Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu						
	2210		2215			2220
Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn						
2225		2230		2235		2240
Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln						
	2245		2250			2255
Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met						
	2260		2265			2270
Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu						
	2275		2280			2285
Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu						
	2290		2295			2300
Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu						
2305		2310		2315		2320
Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile						
	2325		2330			2335
Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr						
	2340		2345			2350
Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu						
	2355		2360			2365
Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala						
	2370		2375			2380
Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile						
2385		2390		2395		2400
Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu						
	2405		2410			2415
Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser						
	2420		2425			2430
Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu						
	2435		2440			2445
Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp						
	2450		2455			2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro						
2465		2470		2475		2480
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys						
	2485		2490			2495
Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu						
	2500		2505			2510
Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu						
	2515		2520			2525
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser						
	2530		2535			2540
Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro						
2545		2550		2555		2560

```
<220>
<223> Description of Artificial Sequence:/note =
        synthetic construct
```

59

Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn	
690						695					700					
Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys	
705					710				715						720	
Glu	Gly	Gln	Lys	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln	
				725					730						735	
Leu	Asn	Leu	Phe	Ala	Arg	Met	Cys	Leu	Asp	Arg	Gln	Tyr	Leu	Ala	Ile	
			740					745					750			
Asn	Glu	Ile	Ser	Gly	Gln	Leu	Asp	Val	Asp	Leu	Ile	Leu	Arg	Cys	Met	
		755					760					765				
Ser	Asp	Glu	Asn	Leu	Pro	Tyr	Asp	Leu	Arg	Ala	Ser	Phe	Cys	Arg	Leu	
	770					775				780						
Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro	
785					790				795						800	
Val	Lys	Tyr	Ala	Arg	Leu	Trp	Ser	Glu	Ile	Pro	Ser	Glu	Ile	Ala	Ile	
			805					810						815		
Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg	
			820					825					830			
Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arg	Asp	Val	Val	
			835				840					845				
Cys	Gln	Arg	Phe	Pro	Phe	Ser	Asp	Lys	Glu	Lys	Asn	Lys	Leu	Thr	Phe	
	850					855					860					
Glu	Val	Val	Asn	Leu	Ala	Arg	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Asn	
865					870				875						880	
Phe	Ser	Asp	Leu	Leu	Arg	Leu	Thr	Lys	Ile	Leu	Leu	Ala	Ile	Leu	Asp	
			885					890						895		
Cys	Val	His	Val	Thr	Thr	Ile	Phe	Pro	Ile	Ser	Lys	Met	Thr	Lys	Gly	
			900					905					910			
Glu	Glu	Asn	Lys	Gly	Ser	Asn	Val	Met	Arg	Ser	Ile	His	Gly	Val	Gly	
		915					920					925				
Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met	
	930					935					940					
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro	
945					950				955						960	
Glu	Lys	Glu	Asp	Ile	Met	Val	Met	Asp	Thr	Lys	Leu	Lys	Ile	Ile	Glu	
			965					970						975		
Ile	Leu	Gln	Phe	Ile	Leu	Asn	Val	Arg	Leu	Asp	Tyr	Arg	Ile	Ser	Cys	
			980					985					990			
Leu	Leu	Cys	Ile	Phe	Lys	Arg	Glu	Phe	Asp	Glu	Ser	Asn	Ser	Gln	Ser	
		995					1000					1005				
Ser	Glu	Thr	Ser	Ser	Gly	Asn	Ser	Ser	Gln	Glu	Gly	Pro	Ser	Asn	Val	
	1010					1015					1020					
Pro	Gly	Ala	Leu	Asp	Phe	Glu	His	Ile	Glu	Glu	Gln	Ala	Glu	Gly	Ile	
1025					1030				1035						1040	
Phe	Gly	Gly	Ser	Glu	Glu	Asn	Thr	Pro	Leu	Asp	Leu	Asp	Asp	His	Gly	
			1045					1050						1055		
Gly	Arg	Thr	Phe	Leu	Arg	Val	Leu	Leu	His	Leu	Thr	Met	His	Asp	Tyr	
			1060				1065					1070				
Pro	Pro	Leu	Val	Ser	Gly	Ala	Leu	Gln	Leu	Leu	Phe	Arg	His	Phe	Ser	
		1075				1080						1085				
Gln	Arg	Gln	Glu	Val	Leu	Gln	Ala	Phe	Lys	Gln	Val	Gln	Leu	Leu	Val	
	1090					1095					1100					
Thr	Ser	Gln	Asp	Val	Asp	Asn	Tyr	Lys	Gln	Ile	Lys	Gln	Asp	Leu	Asp	
1105					1110				1115						1120	
Gln	Leu	Arg	Ser	Ile	Val	Glu	Lys	Ser	Glu	Leu	Trp	Val	Tyr	Lys	Gly	
			1125					1130						1135		
Gln	Gly	Pro	Asp	Glu	Pro	Met	Asp	Gly	Ala	Ser	Gly	Glu	Asn	Glu	His	
		1140						1145				1150				
Lys	Lys	Thr	Glu	Glu	Gly	Thr	Ser	Lys	Pro	Leu	Lys	His	Glu	Ser	Thr	
		1155					1160					1165				
Ser	Ser	Tyr	Asn	Tyr	Arg	Val	Val	Lys	Glu	Ile	Leu	Ile	Arg	Leu	Ser	

1170	1175	1180
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln		
1185	1190	1195
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu		1200
	1205	1210
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu		1215
	1220	1225
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn		1230
	1235	1240
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn		1245
	1250	1255
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn		1260
1265	1270	1275
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val		1280
	1285	1290
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu		1295
	1300	1305
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp		1310
	1315	1320
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe		1325
	1330	1335
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser		1340
1345	1350	1355
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile		1360
	1365	1370
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr		1375
	1380	1385
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg		1390
	1395	1400
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile		1405
	1410	1415
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu		1420
1425	1430	1435
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val		1440
	1445	1450
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp		1455
	1460	1465
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr		1470
	1475	1480
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr		1485
	1490	1495
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr		1500
1505	1510	1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys		1520
	1525	1530
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro		1535
	1540	1545
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn		1550
	1555	1560
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala		1565
	1570	1575
Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile		1580
1585	1590	1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg		1600
	1605	1610
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg		1615
	1620	1625
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu		1630
	1635	1640
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu		1645
	1650	1655
		1660

Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
 1685 1690 1695
 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
 1700 1705 1710
 Arg Arg Glu Asp Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
 1715 1720 1725
 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
 1730 1735 1740
 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
 1745 1750 1755 1760
 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
 1765 1770 1775
 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
 1780 1785 1790
 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
 1795 1800 1805
 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
 1810 1815 1820
 Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
 1825 1830 1835 1840
 Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
 1845 1850 1855
 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
 1860 1865 1870
 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
 1875 1880 1885
 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
 1890 1895 1900
 Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
 1905 1910 1915 1920
 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu
 1925 1930 1935
 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
 1940 1945 1950
 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp
 1955 1960 1965
 Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Leu Gly Leu Tyr
 1970 1975 1980
 Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu
 1985 1990 1995 2000
 Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala
 2005 2010 2015
 Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn
 2020 2025 2030
 Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu
 2035 2040 2045
 Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His
 2050 2055 2060
 Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu
 2065 2070 2075 2080
 Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe
 2085 2090 2095
 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val
 2100 2105 2110
 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys
 2115 2120 2125
 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
 2130 2135 2140
 Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg

2145	2150	2155	2160
Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys			
	2165	2170	2175
Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu			
	2180	2185	2190
Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu			
	2195	2200	2205
Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro			
	2210	2215	2220
Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser			
2225	2230	2235	2240
Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro			
	2245	2250	2255
Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu			
	2260	2265	2270
Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro			
	2275	2280	2285
Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu			
	2290	2295	2300
Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe			
2305	2310	2315	2320
Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys			
	2325	2330	2335
Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe			
	2340	2345	2350
Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val			
	2355	2360	2365
His Glu Phe Phe Tyr Ser Leu Leu Leu Phe Asp Leu Val Tyr Arg Glu			
	2370	2375	2380
Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro			
2385	2390	2395	2400
Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser			
	2405	2410	2415
Ile Val Gly Tyr Leu Phe Phe Lys Asp Asp Phe Ile Leu Glu Val Asp			
	2420	2425	2430
Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala			
	2435	2440	2445
Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn			
	2450	2455	2460
Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr			
2465	2470	2475	2480
Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val			
	2485	2490	2495
Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val			
	2500	2505	2510
Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile			
	2515	2520	2525
Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Ile Val Leu Asn Leu			
	2530	2535	2540
Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys			
2545	2550	2555	2560
Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu			
	2565	2570	2575
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile			
	2580	2585	2590
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val			
	2595	2600	2605
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala			
	2610	2615	2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala			
2625	2630	2635	2640

```
<210> 12
<211> 2749
<212> PRT
<213> Artificial Sequence
```

```
<220>
<223> Description of Artificial Sequence:/note =
        synthetic construct
```

65

305		310		315		320
Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp						
	325		330		335	
Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val						
	340		345		350	
Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe						
	355		360		365	
Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg						
	370		375		380	
Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His						
385		390		395		400
Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu						
	405		410		415	
Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile						
	420		425		430	
Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp						
	435		440		445	
Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr						
	450		455		460	
Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu						
465		470		475		480
Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu						
	485		490		495	
Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu						
	500		505		510	
Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr						
	515		520		525	
Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln						
	530		535		540	
Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu						
545		550		555		560
Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys						
	565		570		575	
Gln Phe Gly Phe Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu						
	580		585		590	
Asp Thr Ile Thr Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys						
	595		600		605	
His Ile Thr Ala Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys						
	610		615		620	
Asn Arg Glu Pro Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser						
625		630		635		640
Met Asn Lys Ser Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val						
	645		650		655	
Leu Asn Pro Thr Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu						
	660		665		670	
Ser Arg Phe Glu Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu						
	675		680		685	
Ala Gly Glu Asp Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn						
	690		695		700	
Lys Glu Ile Arg Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys						
705		710		715		720
Glu Gly Gln Lys Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln						
	725		730		735	
Leu Asn Leu Phe Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile						
	740		745		750	
Asn Glu Ile Ser Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met						
	755		760		765	
Ser Asp Glu Asn Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu						
	770		775		780	
Met Leu His Met His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro						
785		790		795		800

Val Lys Tyr Ala Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile
 805 810 815
 Asp Asp Tyr Asp Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg
 820 825 830
 Phe Ala Gln Thr Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val
 835 840 845
 Cys Gln Arg Phe Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe
 850 855 860
 Glu Val Val Asn Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn
 865 870 875 880
 Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
 885 890 895
 Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
 900 905 910
 Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
 915 920 925
 Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Gly Phe Leu Pro Met
 930 935 940
 Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
 945 950 955 960
 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
 965 970 975
 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
 980 985 990
 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
 995 1000 1005
 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
 1010 1015 1020
 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
 1025 1030 1035 1040
 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
 1045 1050 1055
 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
 1060 1065 1070
 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
 1075 1080 1085
 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
 1090 1095 1100
 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
 1105 1110 1115 1120
 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
 1125 1130 1135
 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
 1140 1145 1150
 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
 1155 1160 1165
 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
 1170 1175 1180
 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
 1185 1190 1195 1200
 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
 1205 1210 1215
 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
 1220 1225 1230
 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
 1235 1240 1245
 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
 1250 1255 1260
 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
 1265 1270 1275 1280
 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val

	1285		1290		1295
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu					
	1300		1305		1310
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp					
	1315		1320		1325
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe					
	1330		1335		1340
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser					
1345	1350		1355		1360
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile					
	1365		1370		1375
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr					
	1380		1385		1390
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg					
	1395		1400		1405
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile					
	1410		1415		1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu					
1425	1430		1435		1440
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val					
	1445		1450		1455
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp					
	1460		1465		1470
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr					
	1475		1480		1485
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr					
	1490		1495		1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr					
1505	1510		1515		1520
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys					
	1525		1530		1535
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro					
	1540		1545		1550
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn					
	1555		1560		1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala					
	1570		1575		1580
Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile					
1585	1590		1595		1600
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg					
	1605		1610		1615
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg					
	1620		1625		1630
Pro Glu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu					
	1635		1640		1645
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu					
	1650		1655		1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg					
1665	1670		1675		1680
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile					
	1685		1690		1695
Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn					
	1700		1705		1710
Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp					
	1715		1720		1725
His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr					
	1730		1735		1740
Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Asp Leu Thr Ser Phe Gly					
1745	1750		1755		1760
Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly					
	1765		1770		1775

2260	2265	2270
Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu		
2275	2280	2285
Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu		
2290	2295	2300
Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu		
2305	2310	2315
Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile		2320
2325	2330	2335
Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr		
2340	2345	2350
Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu		
2355	2360	2365
Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala		
2370	2375	2380
Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile		
2385	2390	2395
Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu		2400
2405	2410	2415
Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser		
2420	2425	2430
Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu		
2435	2440	2445
Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp		
2450	2455	2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro		
2465	2470	2475
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys		
2485	2490	2495
Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu		
2500	2505	2510
Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu		
2515	2520	2525
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser		
2530	2535	2540
Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro		
2545	2550	2555
Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Phe Met Val		
2565	2570	2575
Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe		
2580	2585	2590
Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr		
2595	2600	2605
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr		
2610	2615	2620
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr		
2625	2630	2635
Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr		
2645	2650	2655
Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp		
2660	2665	2670
Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu		
2675	2680	2685
Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr		
2690	2695	2700
Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp		
2705	2710	2715
Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly		
2725	2730	2735
His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala		
2740	2745	

<210> 13

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
synthetic construct

<400> 13

Met	Ser	Asp	Lys	Met	Ser	Ser	Phe	Leu	His	Ile	Gly	Asp	Ile	Cys	Ser
1				5					10					15	
Leu	Tyr	Ala	Glu	Gly	Ser	Thr	Asn	Gly	Phe	Ile	Ser	Thr	Leu	Gly	Leu
		20						25					30		
Val	Asp	Asp	Arg	Cys	Val	Val	Gln	Pro	Glu	Ala	Gly	Asp	Leu	Asn	Asn
	35						40					45			
Pro	Pro	Lys	Lys	Phe	Arg	Asp	Cys	Leu	Phe	Lys	Leu	Cys	Pro	Met	Asn
	50					55					60				
Arg	Tyr	Ser	Ala	Gln	Lys	Gln	Phe	Trp	Lys	Ala	Ala	Lys	Pro	Gly	Ala
65				70						75					80
Asn	Ser	Thr	Thr	Asp	Ala	Val	Leu	Leu	Asn	Lys	Leu	His	His	Ala	Ala
			85						90					95	
Asp	Leu	Glu	Lys	Lys	Gln	Asn	Glu	Thr	Glu	Asn	Arg	Lys	Leu	Leu	Gly
		100						105					110		
Thr	Val	Ile	Gln	Tyr	Gly	Asn	Val	Ile	Gln	Leu	Leu	His	Leu	Lys	Ser
		115				120						125			
Asn	Lys	Tyr	Leu	Thr	Val	Asn	Lys	Arg	Leu	Pro	Ala	Leu	Leu	Glu	Lys
	130					135					140				
Asn	Ala	Met	Arg	Val	Thr	Leu	Asp	Glu	Ala	Gly	Asn	Glu	Gly	Ser	Trp
145				150						155					160
Phe	Tyr	Ile	Gln	Pro	Phe	Tyr	Lys	Leu	Arg	Ser	Ile	Gly	Asp	Ser	Val
			165						170					175	
Val	Ile	Gly	Asp	Lys	Val	Val	Leu	Asn	Pro	Val	Asn	Ala	Gly	Gln	Pro
		180						185					190		
Leu	His	Ala	Ser	Ser	His	Gln	Leu	Val	Asp	Asn	Pro	Gly	Cys	Asn	Glu
	195					200						205			
Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Val	Leu	Phe	Met
	210					215					220				
Lys	Trp	Ser	Asp	Asn	Lys	Asp	Asp	Ile	Leu	Lys	Gly	Gly	Asp	Val	Val
225				230						235					240
Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His
			245						250					255	
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala
		260						265					270		
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln
		275					280					285			
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg
	290					295					300				
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro
305				310						315					320
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp
			325						330					335	
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg	Asn	Ala	Gln	Glu	Lys	Met	Val
		340						345					350		
Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe
		355					360					365			
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg
	370					375					380				
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His

385		390		395		400
Ser Thr Asn Ile	Pro Ile Asp Lys Glu	Glu Glu Lys Pro Val Met Leu				
	405	410	415			
Lys Ile Gly Thr	Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile					
	420	425	430			
Val Pro Val Ser	Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp					
	435	440	445			
Ala Ser Lys Val	Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr					
	450	455	460			
Ile Thr Gln Asn	Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu					
465	470	475	480			
Val Tyr Phe Val	Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu					
	485	490	495			
Val Val Phe Ser	Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu					
	500	505	510			
Gln Asn Ile Leu	Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr					
	515	520	525			
Asp Cys Gly Asp	Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln					
	530	535	540			
Arg His Ala Pro	Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu					
545	550	555	560			
Arg His Ser Gln	Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys					
	565	570	575			
Gln Phe Gly Phe	Met Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu					
	580	585	590			
Asp Thr Ile Thr	Ala Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys					
	595	600	605			
His Ile Thr Ala	Ala Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys					
	610	615	620			
Asn Arg Glu Pro	Arg Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser					
625	630	635	640			
Met Asn Lys Ser	Ile Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val					
	645	650	655			
Leu Asn Pro Thr	Asn Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu					
	660	665	670			
Ser Arg Phe Glu	Phe Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu					
	675	680	685			
Ala Gly Glu Asp	Glu Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn					
	690	695	700			
Lys Glu Ile Arg	Ser Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys					
705	710	715	720			
Glu Gly Gln Lys	Glu Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln					
	725	730	735			
Leu Asn Leu Phe	Ala Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile					
	740	745	750			
Asn Glu Ile Ser	Gly Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met					
	755	760	765			
Ser Asp Glu Asn	Leu Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu					
	770	775	780			
Met Leu His Met	His Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro					
785	790	795	800			
Val Lys Tyr Ala	Arg Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile					
	805	810	815			
Asp Asp Tyr Asp	Ser Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg					
	820	825	830			
Phe Ala Gln Thr	Met Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val					
	835	840	845			
Cys Gln Arg Phe	Pro Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe					
	850	855	860			
Glu Val Val Asn	Leu Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn					
865	870	875	880			

Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
 885 890 895
 Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
 900 905 910
 Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
 915 920 925
 Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Gly Phe Leu Pro Met
 930 935 940
 Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
 945 950 955 960
 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
 965 970 975
 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
 980 985 990
 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
 995 1000 1005
 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
 1010 1015 1020
 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
 1025 1030 1035 1040
 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
 1045 1050 1055
 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
 1060 1065 1070
 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
 1075 1080 1085
 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
 1090 1095 1100
 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
 1105 1110 1115 1120
 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
 1125 1130 1135
 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
 1140 1145 1150
 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
 1155 1160 1165
 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
 1170 1175 1180
 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
 1185 1190 1195 1200
 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
 1205 1210 1215
 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
 1220 1225 1230
 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
 1235 1240 1245
 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
 1250 1255 1260
 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
 1265 1270 1275 1280
 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
 1285 1290 1295
 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
 1300 1305 1310
 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
 1315 1320 1325
 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile

	1365		1370		1375
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr					
	1380		1385		1390
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg					
	1395		1400		1405
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile					
	1410		1415		1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu					
1425		1430		1435	1440
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val					
	1445		1450		1455
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp					
	1460		1465		1470
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr					
	1475		1480		1485
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr					
	1490		1495		1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr					
1505		1510		1515	1520
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys					
	1525		1530		1535
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro					
	1540		1545		1550
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn					
	1555		1560		1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala					
	1570		1575		1580
Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile					
1585		1590		1595	1600
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg					
	1605		1610		1615
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg					
	1620		1625		1630
Pro Glu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu					
	1635		1640		1645
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu					
	1650		1655		1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg					
1665		1670		1675	1680
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu					
	1685		1690		1695
Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly					
	1700		1705		1710
Arg Arg Glu Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly					
	1715		1720		1725
Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser					
	1730		1735		1740
Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp					
1745		1750		1755	1760
Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser					
	1765		1770		1775
Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu					
	1780		1785		1790
Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr					
	1795		1800		1805
Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met					
	1810		1815		1820
Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser					
1825		1830		1835	1840
Asp Leu Gly Asn Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro					
	1845		1850		1855

Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
 1860 1865 1870
 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
 1875 1880 1885
 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
 1890 1895 1900
 Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
 1905 1910 1915 1920
 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu
 1925 1930 1935
 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
 1940 1945 1950
 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp
 1955 1960 1965
 Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Leu Gly Leu Tyr
 1970 1975 1980
 Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu
 1985 1990 1995 2000
 Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala
 2005 2010 2015
 Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn
 2020 2025 2030
 Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu
 2035 2040 2045
 Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His
 2050 2055 2060
 Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu
 2065 2070 2075 2080
 Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe
 2085 2090 2095
 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val
 2100 2105 2110
 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys
 2115 2120 2125
 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
 2130 2135 2140
 Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg
 2145 2150 2155 2160
 Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys
 2165 2170 2175
 Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu
 2180 2185 2190
 Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu
 2195 2200 2205
 Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro
 2210 2215 2220
 Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser
 2225 2230 2235 2240
 Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro
 2245 2250 2255
 Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu
 2260 2265 2270
 Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro
 2275 2280 2285
 Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu
 2290 2295 2300
 Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe
 2305 2310 2315 2320
 Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys
 2325 2330 2335
 Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe

2340	2345	2350
Leu Tyr His Leu Leu Tyr	Leu Leu Ile Cys Ala Met	Gly Leu Phe Val
2355	2360	2365
His Glu Phe Phe Tyr Ser	Leu Leu Leu Phe Asp	Leu Val Tyr Arg Glu
2370	2375	2380
Glu Thr Leu Leu Asn Val	Ile Lys Ser Val Thr Arg	Asn Gly Arg Pro
2385	2390	2395
Ile Ile Leu Thr Ala Ala	Leu Ala Leu Ile Leu Val	Tyr Leu Phe Ser
2405	2410	2415
Ile Val Gly Tyr Leu Phe	Phe Lys Asp Asp Phe Ile	Leu Glu Val Asp
2420	2425	2430
Arg Leu Pro Asn Glu Thr	Ala Gly Pro Glu Thr Gly	Glu Ser Leu Ala
2435	2440	2445
Asn Asp Phe Leu Tyr Ser	Asp Val Cys Arg Val Glu	Thr Gly Glu Asn
2450	2455	2460
Cys Thr Ser Pro Ala Pro	Lys Glu Glu Leu Leu Pro	Val Glu Glu Thr
2465	2470	2475
Glu Gln Asp Lys Glu His	Thr Cys Glu Thr Leu Leu	Met Cys Ile Val
2485	2490	2495
Thr Val Leu Ser His Gly	Leu Arg Ser Gly Gly Gly	Val Gly Asp Val
2500	2505	2510
Leu Arg Lys Pro Ser Lys	Glu Glu Pro Leu Phe Ala	Ala Arg Val Ile
2515	2520	2525
Tyr Asp Leu Leu Phe Phe	Phe Met Val Ile Ile Ile	Val Leu Asn Leu
2530	2535	2540
Ile Phe Gly Val Ile Ile	Asp Thr Phe Ala Asp	Leu Arg Ser Glu Lys
2545	2550	2555
Gln Lys Lys Glu Glu Ile	Leu Lys Thr Thr Cys Phe	Ile Cys Gly Leu
2565	2570	2575
Glu Arg Asp Lys Phe Asp	Asn Lys Thr Val Thr Phe	Glu Glu His Ile
2580	2585	2590
Lys Glu Glu His Asn Met	Trp His Tyr Leu Cys Phe	Ile Val Leu Val
2595	2600	2605
Lys Val Lys Asp Ser Thr	Glu Tyr Thr Gly Pro Glu	Ser Tyr Val Ala
2610	2615	2620
Glu Met Ile Arg Glu Arg	Asn Leu Asp Trp Phe Pro	Arg Met Arg Ala
2625	2630	2635
Met Ser Leu Val Ser Ser	Asp Ser Glu Gly Glu Gln	Asn Glu Leu Arg
2645	2650	2655
Asn Leu Gln Glu Lys Leu	Glu Ser Thr Met Lys Leu	Val Thr Asn Leu
2660	2665	2670
Ser Gly Gln Leu Ser Glu	Leu Lys Asp Gln Met Thr	Glu Gln Arg Lys
2675	2680	2685
Gln Lys Gln Arg Ile Gly	Leu Leu Gly His Pro Pro	His Met Asn Val
2690	2695	2700
Asn Pro Gln Gln Pro Ala		
2705	2710	

<210> 14

<211> 2749

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
synthetic construct

<400> 14

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser
1 5 10 15

Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
 20 25 30
 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
 35 40 45
 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
 50 55 60
 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
 65 70 75 80
 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
 85 90 95
 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
 100 105 110
 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
 115 120 125
 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
 130 135 140
 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
 145 150 155 160
 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
 165 170 175
 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
 180 185 190
 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
 195 200 205
 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
 210 215 220
 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
 225 230 235 240
 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His
 245 250 255
 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
 260 265 270
 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
 275 280 285
 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
 290 295 300
 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
 305 310 315 320
 Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
 325 330 335
 Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
 340 345 350
 Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
 355 360 365
 Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
 370 375 380
 Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
 385 390 395 400
 Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu
 405 410 415
 Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
 420 425 430
 Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
 435 440 445
 Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
 450 455 460
 Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
 465 470 475 480
 Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
 485 490 495
 Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu

500					505					510					
Gln	Asn	Ile	Leu	Lys	Gln	Ile	Phe	Lys	Leu	Leu	Gln	Ala	Pro	Phe	Thr
515					520					525					
Asp	Cys	Gly	Asp	Gly	Pro	Met	Leu	Arg	Leu	Glu	Glu	Leu	Gly	Asp	Gln
530					535					540					
Arg	His	Ala	Pro	Phe	Arg	His	Ile	Cys	Arg	Leu	Cys	Tyr	Arg	Val	Leu
545					550					555					
Arg	His	Ser	Gln	Gln	Asp	Tyr	Arg	Lys	Asn	Gln	Glu	Tyr	Ile	Ala	Lys
565					570					575					
Gln	Phe	Gly	Phe	Met	Gln	Lys	Gln	Ile	Gly	Tyr	Asp	Val	Leu	Ala	Glu
580					585					590					
Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys
595					600					605					
His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys
610					615					620					
Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser
625					630					635					
Met	Asn	Lys	Ser	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Ala	Val
645					650					655					
Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Ile	Glu	Thr	Lys	Leu	Val	Leu
660					665					670					
Ser	Arg	Phe	Glu	Phe	Glu	Gly	Val	Ser	Thr	Gly	Glu	Asn	Ala	Leu	Glu
675					680					685					
Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn
690					695					700					
Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys
705					710					715					
Glu	Gly	Gln	Lys	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln
725					730					735					
Leu	Asn	Leu	Phe	Ala	Arg	Met	Cys	Leu	Asp	Arg	Gln	Tyr	Leu	Ala	Ile
740					745					750					
Asn	Glu	Ile	Ser	Gly	Gln	Leu	Asp	Val	Asp	Leu	Ile	Leu	Arg	Cys	Met
755					760					765					
Ser	Asp	Glu	Asn	Leu	Pro	Tyr	Asp	Leu	Arg	Ala	Ser	Phe	Cys	Arg	Leu
770					775					780					
Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro
785					790					795					
Val	Lys	Tyr	Ala	Arg	Leu	Trp	Ser	Glu	Ile	Pro	Ser	Glu	Ile	Ala	Ile
805					810					815					
Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg
820					825					830					
Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arg	Asp	Val	Val
835					840					845					
Cys	Gln	Arg	Phe	Pro	Phe	Ser	Asp	Lys	Glu	Lys	Asn	Lys	Leu	Thr	Phe
850					855					860					
Glu	Val	Val	Asn	Leu	Ala	Arg	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Asn
865					870					875					
Phe	Ser	Asp	Leu	Leu	Arg	Leu	Thr	Lys	Ile	Leu	Leu	Ala	Ile	Leu	Asp
885					890					895					
Cys	Val	His	Val	Thr	Thr	Ile	Phe	Pro	Ile	Ser	Lys	Met	Thr	Lys	Gly
900					905					910					
Glu	Glu	Asn	Lys	Gly	Ser	Asn	Val	Met	Arg	Ser	Ile	His	Gly	Val	Gly
915					920					925					
Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met
930					935					940					
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro
945					950					955					
Glu	Lys	Glu	Asp	Ile	Met	Val	Met	Asp	Thr	Lys	Leu	Lys	Ile	Ile	Glu
965					970					975					
Ile	Leu	Gln	Phe	Ile	Leu	Asn	Val	Arg	Leu	Asp	Tyr	Arg	Ile	Ser	Cys
980					985					990					

Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
 995 1000 1005
 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
 1010 1015 1020

 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
 1025 1030 1035 1040
 Phe Gly Gly Ser Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
 1045 1050 1055
 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
 1060 1065 1070
 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
 1075 1080 1085
 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
 1090 1095 1100
 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
 1105 1110 1115 1120
 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
 1125 1130 1135
 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
 1140 1145 1150
 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
 1155 1160 1165
 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
 1170 1175 1180
 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
 1185 1190 1195 1200
 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
 1205 1210 1215
 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
 1220 1225 1230
 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
 1235 1240 1245
 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
 1250 1255 1260
 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
 1265 1270 1275 1280
 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
 1285 1290 1295
 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
 1300 1305 1310
 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
 1315 1320 1325
 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
 1365 1370 1375
 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
 1380 1385 1390
 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 1395 1400 1405
 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
 1410 1415 1420
 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
 1445 1450 1455
 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
 1460 1465 1470

Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
 1505 1510 1515 1520
 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
 1525 1530 1535
 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
 1540 1545 1550
 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Asp Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
 1635 1640 1645
 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
 1650 1655 1660
 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
 1685 1690 1695
 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn
 1700 1705 1710
 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
 1715 1720 1725
 His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
 1730 1735 1740
 Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Glu Leu Thr Ser Phe Gly
 1745 1750 1755 1760
 Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly
 1765 1770 1775
 Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
 1780 1785 1790
 Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
 1795 1800 1805
 Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
 1810 1815 1820
 Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His
 1825 1830 1835 1840
 Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe
 1845 1850 1855
 Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala
 1860 1865 1870
 Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp
 1875 1880 1885
 Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr
 1890 1895 1900
 Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala
 1905 1910 1915 1920
 Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp
 1925 1930 1935
 Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala
 1940 1945 1950
 Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile

1955					1960					1965						
Leu	Arg	Phe	Leu	Gln	Leu	Leu	Cys	Glu	Asn	His	Asn	Arg	Asp	Leu	Gln	
1970					1975					1980						
Asn	Phe	Leu	Arg	Cys	Gln	Asn	Asn	Lys	Thr	Asn	Tyr	Asn	Leu	Val	Cys	
1985					1990					1995					2000	
Glu	Thr	Leu	Gln	Phe	Leu	Asp	Cys	Ile	Cys	Gly	Ser	Thr	Thr	Gly	Gly	
2005					2010					2015						
Leu	Gly	Leu	Leu	Gly	Leu	Tyr	Ile	Asn	Glu	Lys	Asn	Val	Ala	Leu	Ile	
2020					2025					2030						
Asn	Gln	Thr	Leu	Glu	Ser	Leu	Thr	Glu	Tyr	Cys	Gln	Gly	Pro	Cys	His	
2035					2040					2045						
Glu	Asn	Gln	Asn	Cys	Ile	Ala	Thr	His	Glu	Ser	Asn	Gly	Ile	Asp	Ile	
2050					2055					2060						
Ile	Thr	Ala	Leu	Ile	Leu	Asn	Asp	Ile	Asn	Pro	Leu	Gly	Lys	Lys	Arg	
2065					2070					2075					2080	
Met	Asp	Leu	Val	Leu	Glu	Leu	Lys	Asn	Asn	Ala	Ser	Lys	Leu	Leu	Leu	
2085					2090					2095						
Ala	Ile	Met	Glu	Ser	Arg	His	Asp	Ser	Glu	Asn	Ala	Glu	Arg	Ile	Leu	
2100					2105					2110						
Tyr	Asn	Met	Arg	Pro	Lys	Glu	Leu	Val	Glu	Val	Ile	Lys	Lys	Ala	Tyr	
2115					2120					2125						
Met	Gln	Gly	Glu	Val	Glu	Phe	Glu	Asp	Gly	Glu	Asn	Gly	Glu	Asp	Gly	
2130					2135					2140						
Ala	Ala	Ser	Pro	Arg	Asn	Val	Gly	His	Asn	Ile	Tyr	Ile	Leu	Ala	His	
2145					2150					2155					2160	
Gln	Leu	Ala	Arg	His	Asn	Lys	Glu	Leu	Gln	Thr	Met	Leu	Lys	Pro	Gly	
2165					2170					2175						
Gly	Gln	Val	Asp	Gly	Asp	Glu	Ala	Leu	Glu	Phe	Tyr	Ala	Lys	His	Thr	
2180					2185					2190						
Ala	Gln	Ile	Glu	Ile	Val	Arg	Leu	Asp	Arg	Thr	Met	Glu	Gln	Ile	Val	
2195					2200					2205						
Phe	Pro	Val	Pro	Ser	Ile	Cys	Glu	Phe	Leu	Thr	Lys	Glu	Ser	Lys	Leu	
2210					2215					2220						
Arg	Ile	Tyr	Tyr	Thr	Thr	Glu	Arg	Asp	Glu	Gln	Gly	Ser	Lys	Ile	Asn	
2225					2230					2235					2240	
Asp	Phe	Phe	Leu	Arg	Ser	Glu	Asp	Leu	Phe	Asn	Glu	Met	Asn	Trp	Gln	
2245					2250					2255						
Lys	Lys	Leu	Arg	Ala	Gln	Pro	Val	Leu	Tyr	Trp	Cys	Ala	Arg	Asn	Met	
2260					2265					2270						
Ser	Phe	Trp	Ser	Ser	Ile	Ser	Phe	Asn	Leu	Ala	Val	Leu	Met	Asn	Leu	
2275					2280					2285						
Leu	Val	Ala	Phe	Phe	Tyr	Pro	Phe	Lys	Gly	Val	Arg	Gly	Gly	Thr	Leu	
2290					2295					2300						
Glu	Pro	His	Trp	Ser	Gly	Leu	Leu	Trp	Thr	Ala	Met	Leu	Ile	Ser	Leu	
2305					2310					2315					2320	
Ala	Ile	Val	Ile	Ala	Leu	Pro	Lys	Pro	His	Gly	Ile	Arg	Ala	Leu	Ile	
2325					2330					2335						
Ala	Ser	Thr	Ile	Leu	Arg	Leu	Ile	Phe	Ser	Val	Gly	Leu	Gln	Pro	Thr	
2340					2345					2350						
Leu	Phe	Leu	Leu	Gly	Ala	Phe	Asn	Val	Cys	Asn	Lys	Ile	Ile	Phe	Leu	
2355					2360					2365						
Met	Ser	Phe	Val	Gly	Asn	Cys	Gly	Thr	Phe	Thr	Arg	Gly	Tyr	Arg	Ala	
2370					2375					2380						
Met	Val	Leu	Asp	Val	Glu	Phe	Leu	Tyr	His	Leu	Leu	Tyr	Leu	Leu	Ile	
2385					2390					2395					2400	
Cys	Ala	Met	Gly	Leu	Phe	Val	His	Glu	Phe	Phe	Tyr	Ser	Leu	Leu	Leu	
2405					2410					2415						
Phe	Asp	Leu	Val	Tyr	Arg	Glu	Glu	Thr	Leu	Leu	Asn	Val	Ile	Lys	Ser	
2420					2425					2430						
Val	Thr	Arg	Asn	Gly	Arg	Pro	Ile	Ile	Leu	Thr	Ala	Ala	Leu	Ala	Leu	
2435					2440					2445						

```

Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp
 2450                2455                2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro
2465                2470                2475                2480
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys
                2485                2490                2495
Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu
                2500                2505                2510
Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu
                2515                2520                2525
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser
                2530                2535                2540
Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro
2545                2550                2555                2560
Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Phe Met Val
                2565                2570                2575
Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
                2580                2585                2590
Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr
                2595                2600                2605
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
                2610                2615                2620
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr
2625                2630                2635                2640
Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
                2645                2650                2655
Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
                2660                2665                2670
Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
                2675                2680                2685
Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
                2690                2695                2700
Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
2705                2710                2715                2720
Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
                2725                2730                2735
His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
                2740                2745

```

<210> 15

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
synthetic construct

<400> 15

```

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser
 1                5                10                15
Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
                20                25                30
Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
                35                40                45
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
                50                55                60
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
65                70                75                80
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala

```

85										90					95				
Asp	Leu	Glu	Lys	Lys	Gln	Asn	Glu	Thr	Glu	Asn	Arg	Lys	Leu	Leu	Gly				
			100					105					110						
Thr	Val	Ile	Gln	Tyr	Gly	Asn	Val	Ile	Gln	Leu	Leu	His	Leu	Lys	Ser				
			115					120				125							
Asn	Lys	Tyr	Leu	Thr	Val	Asn	Lys	Arg	Leu	Pro	Ala	Leu	Leu	Glu	Lys				
			130				135				140								
Asn	Ala	Met	Arg	Val	Thr	Leu	Asp	Glu	Ala	Gly	Asn	Glu	Gly	Ser	Trp				
145						150				155					160				
Phe	Tyr	Ile	Gln	Pro	Phe	Tyr	Lys	Leu	Arg	Ser	Ile	Gly	Asp	Ser	Val				
				165				170							175				
Val	Ile	Gly	Asp	Lys	Val	Val	Leu	Asn	Pro	Val	Asn	Ala	Gly	Gln	Pro				
			180					185					190						
Leu	His	Ala	Ser	Ser	His	Gln	Leu	Val	Asp	Asn	Pro	Gly	Cys	Asn	Glu				
			195				200					205							
Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Val	Leu	Phe	Met				
			210				215					220							
Lys	Trp	Ser	Asp	Asn	Lys	Asp	Asp	Ile	Leu	Lys	Gly	Gly	Asp	Val	Val				
225					230					235					240				
Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His				
				245					250						255				
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala				
			260					265					270						
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln				
			275				280					285							
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg				
			290				295				300								
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro				
305					310					315					320				
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp				
				325					330					335					
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg	Asn	Ala	Gln	Glu	Lys	Met	Val				
			340					345					350						
Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe				
			355				360					365							
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg				
			370			375					380								
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His				
385					390					395					400				
Ser	Thr	Asn	Ile	Pro	Ile	Asp	Lys	Glu	Glu	Glu	Lys	Pro	Val	Met	Leu				
				405					410					415					
Lys	Ile	Gly	Thr	Ser	Pro	Leu	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile				
			420					425					430						
Val	Pro	Val	Ser	Pro	Ala	Glu	Val	Arg	Asp	Leu	Asp	Phe	Ala	Asn	Asp				
			435				440					445							
Ala	Ser	Lys	Val	Leu	Gly	Ser	Ile	Ala	Gly	Lys	Leu	Glu	Lys	Gly	Thr				
			450			455					460								
Ile	Thr	Gln	Asn	Glu	Arg	Arg	Ser	Val	Thr	Lys	Leu	Leu	Glu	Asp	Leu				
465					470					475					480				
Val	Tyr	Phe	Val	Thr	Gly	Gly	Thr	Asn	Ser	Gly	Gln	Asp	Val	Leu	Glu				
				485					490					495					
Val	Val	Phe	Ser	Lys	Pro	Asn	Arg	Glu	Arg	Gln	Lys	Leu	Met	Arg	Glu				
			500					505					510						
Gln	Asn	Ile	Leu	Lys	Gln	Ile	Phe	Lys	Leu	Leu	Gln	Ala	Pro	Phe	Thr				
			515				520					525							
Asp	Cys	Gly	Asp	Gly	Pro	Met	Leu	Arg	Leu	Glu	Glu	Leu	Gly	Asp	Gln				
			530			535					540								
Arg	His	Ala	Pro	Phe	Arg	His	Ile	Cys	Arg	Leu	Cys	Tyr	Arg	Val	Leu				
545					550					555					560				
Arg	His	Ser	Gln	Gln	Asp	Tyr	Arg	Lys	Asn	Gln	Glu	Tyr	Ile	Ala	Lys				
				565					570					575					

Gln	Phe	Gly	Phe	Met	Gln	Lys	Gln	Ile	Gly	Tyr	Asp	Val	Leu	Ala	Glu		
			580					585					590				
Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys		
		595					600					605					
His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys		
	610					615					620						
Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser		
625					630					635					640		
Met	Asn	Lys	Ser	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Ala	Val		
				645					650						655		
Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Ile	Glu	Thr	Lys	Leu	Val	Leu		
			660				665							670			
Ser	Arg	Phe	Glu	Phe	Glu	Gly	Val	Ser	Thr	Gly	Glu	Asn	Ala	Leu	Glu		
		675					680					685					
Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn		
	690					695					700						
Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys		
705					710					715					720		
Glu	Gly	Gln	Lys	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln		
			725					730							735		
Leu	Asn	Leu	Phe	Ala	Arg	Met	Cys	Leu	Asp	Arg	Gln	Tyr	Leu	Ala	Ile		
			740				745							750			
Asn	Glu	Ile	Ser	Gly	Gln	Leu	Asp	Val	Asp	Leu	Ile	Leu	Arg	Cys	Met		
	755						760							765			
Ser	Asp	Glu	Asn	Leu	Pro	Tyr	Asp	Leu	Arg	Ala	Ser	Phe	Cys	Arg	Leu		
	770					775					780						
Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro		
785					790					795					800		
Val	Lys	Tyr	Ala	Arg	Leu	Trp	Ser	Glu	Ile	Pro	Ser	Glu	Ile	Ala	Ile		
			805					810						815			
Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg		
			820				825						830				
Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arg	Asp	Val	Val		
	835						840					845					
Cys	Gln	Arg	Phe	Pro	Phe	Ser	Asp	Lys	Glu	Lys	Asn	Lys	Leu	Thr	Phe		
	850					855					860						
Glu	Val	Val	Asn	Leu	Ala	Arg	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Asn		
865					870					875					880		
Phe	Ser	Asp	Leu	Leu	Arg	Leu	Thr	Lys	Ile	Leu	Leu	Ala	Ile	Leu	Asp		
			885					890						895			
Cys	Val	His	Val	Thr	Thr	Ile	Phe	Pro	Ile	Ser	Lys	Met	Thr	Lys	Gly		
		900					905						910				
Glu	Glu	Asn	Lys	Gly	Ser	Asn	Val	Met	Arg	Ser	Ile	His	Gly	Val	Gly		
	915						920					925					
Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met		
	930					935					940						
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro		
945					950					955					960		
Glu	Lys	Glu	Asp	Ile	Met	Val	Met	Asp	Thr	Lys	Leu	Lys	Ile	Ile	Glu		
			965					970						975			
Ile	Leu	Gln	Phe	Ile	Leu	Asn	Val	Arg	Leu	Asp	Tyr	Arg	Ile	Ser	Cys		
		980					985						990				
Leu	Leu	Cys	Ile	Phe	Lys	Arg	Glu	Phe	Asp	Glu	Ser	Asn	Ser	Gln	Ser		
		995					1000					1005					
Ser	Glu	Thr	Ser	Ser	Gly	Asn	Ser	Ser	Gln	Glu	Gly	Pro	Ser	Asn	Val		
	1010					1015					1020						
Pro	Gly	Ala	Leu	Asp	Phe	Glu	His	Ile	Glu	Glu	Gln	Ala	Glu	Gly	Ile		
1025					1030					1035					1040		
Phe	Gly	Gly	Ser	Glu	Glu	Asn	Thr	Pro	Leu	Asp	Leu	Asp	Asp	His	Gly		
			1045					1050						1055			
Gly	Arg	Thr	Phe	Leu	Arg	Val	Leu	Leu	His	Leu	Thr	Met	His	Asp	Tyr		

1060					1065					1070					
Pro	Pro	Leu	Val	Ser	Gly	Ala	Leu	Gln	Leu	Leu	Phe	Arg	His	Phe	Ser
1075					1080					1085					
Gln	Arg	Gln	Glu	Val	Leu	Gln	Ala	Phe	Lys	Gln	Val	Gln	Leu	Leu	Val
1090					1095					1100					
Thr	Ser	Gln	Asp	Val	Asp	Asn	Tyr	Lys	Gln	Ile	Lys	Gln	Asp	Leu	Asp
1105					1110					1115					
Gln	Leu	Arg	Ser	Ile	Val	Glu	Lys	Ser	Glu	Leu	Trp	Val	Tyr	Lys	Gly
1125					1130					1135					
Gln	Gly	Pro	Asp	Glu	Pro	Met	Asp	Gly	Ala	Ser	Gly	Glu	Asn	Glu	His
1140					1145					1150					
Lys	Lys	Thr	Glu	Glu	Gly	Thr	Ser	Lys	Pro	Leu	Lys	His	Glu	Ser	Thr
1155					1160					1165					
Ser	Ser	Tyr	Asn	Tyr	Arg	Val	Val	Lys	Glu	Ile	Leu	Ile	Arg	Leu	Ser
1170					1175					1180					
Lys	Leu	Cys	Val	Gln	Glu	Ser	Ala	Ser	Val	Arg	Lys	Ser	Arg	Lys	Gln
1185					1190					1195					
Gln	Gln	Arg	Leu	Leu	Arg	Asn	Met	Gly	Ala	His	Ala	Val	Val	Leu	Glu
1205					1210					1215					
Leu	Leu	Gln	Ile	Pro	Tyr	Glu	Lys	Ala	Glu	Asp	Thr	Lys	Met	Gln	Glu
1220					1225					1230					
Ile	Met	Arg	Leu	Ala	His	Glu	Phe	Leu	Gln	Asn	Phe	Cys	Ala	Gly	Asn
1235					1240					1245					
Gln	Gln	Asn	Gln	Ala	Leu	Leu	His	Lys	His	Ile	Asn	Leu	Phe	Leu	Asn
1250					1255					1260					
Pro	Gly	Ile	Leu	Glu	Ala	Val	Thr	Met	Gln	His	Ile	Phe	Met	Asn	Asn
1265					1270					1275					
Phe	Gln	Leu	Cys	Ser	Glu	Ile	Asn	Glu	Arg	Val	Val	Gln	His	Phe	Val
1285					1290					1295					
His	Cys	Ile	Glu	Thr	His	Gly	Arg	Asn	Val	Gln	Tyr	Ile	Lys	Phe	Leu
1300					1305					1310					
Gln	Thr	Ile	Val	Lys	Ala	Glu	Gly	Lys	Phe	Ile	Lys	Lys	Cys	Gln	Asp
1315					1320					1325					
Met	Val	Met	Ala	Glu	Leu	Val	Asn	Ser	Gly	Glu	Asp	Val	Leu	Val	Phe
1330					1335					1340					
Tyr	Asn	Asp	Arg	Ala	Ser	Phe	Gln	Thr	Leu	Ile	Gln	Met	Met	Arg	Ser
1345					1350					1355					
Glu	Arg	Asp	Arg	Met	Asp	Glu	Asn	Ser	Pro	Leu	Phe	Met	Tyr	His	Ile
1365					1370					1375					
His	Leu	Val	Glu	Leu	Leu	Ala	Val	Cys	Thr	Glu	Gly	Lys	Asn	Val	Tyr
1380					1385					1390					
Thr	Glu	Ile	Lys	Cys	Asn	Ser	Leu	Leu	Pro	Leu	Asp	Asp	Ile	Val	Arg
1395					1400					1405					
Val	Val	Thr	His	Glu	Asp	Cys	Ile	Pro	Glu	Val	Lys	Ile	Ala	Tyr	Ile
1410					1415					1420					
Asn	Phe	Leu	Asn	His	Cys	Tyr	Val	Asp	Thr	Glu	Val	Glu	Met	Lys	Glu
1425					1430					1435					
Ile	Tyr	Thr	Ser	Asn	His	Met	Trp	Lys	Leu	Phe	Glu	Asn	Phe	Leu	Val
1445					1450					1455					
Asp	Ile	Cys	Arg	Ala	Cys	Asn	Asn	Thr	Ser	Asp	Arg	Lys	His	Ala	Asp
1460					1465					1470					
Ser	Val	Leu	Glu	Lys	Tyr	Val	Thr	Glu	Ile	Val	Met	Ser	Ile	Val	Thr
1475					1480					1485					
Thr	Phe	Phe	Ser	Ser	Pro	Phe	Ser	Asp	Gln	Ser	Thr	Thr	Leu	Gln	Thr
1490					1495					1500					
Arg	Gln	Pro	Val	Phe	Val	Gln	Leu	Leu	Gln	Gly	Val	Phe	Arg	Val	Tyr
1505					1510					1515					
His	Cys	Asn	Trp	Leu	Met	Pro	Ser	Gln	Lys	Ala	Ser	Val	Glu	Ser	Cys
1525					1530					1535					
Ile	Arg	Val	Leu	Ser	Asp	Val	Ala	Lys	Ser	Arg	Ala	Ile	Ala	Ile	Pro
1540					1545					1550					

Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
 1635 1640 1645
 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
 1650 1655 1660
 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
 1685 1690 1695
 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
 1700 1705 1710
 Arg Arg Glu Asp Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
 1715 1720 1725
 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
 1730 1735 1740
 Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
 1745 1750 1755 1760
 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
 1765 1770 1775
 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
 1780 1785 1790
 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
 1795 1800 1805
 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
 1810 1815 1820
 Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
 1825 1830 1835 1840
 Asp Leu Gly Asn Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
 1845 1850 1855
 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
 1860 1865 1870
 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
 1875 1880 1885
 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
 1890 1895 1900
 Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
 1905 1910 1915 1920
 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu
 1925 1930 1935
 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
 1940 1945 1950
 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp
 1955 1960 1965
 Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Leu Gly Leu Tyr
 1970 1975 1980
 Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu
 1985 1990 1995 2000
 Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala
 2005 2010 2015
 Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn
 2020 2025 2030
 Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu

2035	2040	2045
Lys Asn Asn Ala Ser	Lys Leu Leu Leu Ala Ile	Met Glu Ser Arg His
2050	2055	2060
Asp Ser Glu Asn Ala	Glu Arg Ile Leu Tyr	Asn Met Arg Pro Lys Glu
2065	2070	2075
Leu Val Glu Val Ile	Lys Lys Ala Tyr	Met Gln Gly Glu Val Glu Phe
2085	2090	2095
Glu Asp Gly Glu Asn	Gly Glu Asp Gly Ala Ala	Ser Pro Arg Asn Val
2100	2105	2110
Gly His Asn Ile Tyr	Ile Leu Ala His Gln	Leu Ala Arg His Asn Lys
2115	2120	2125
Glu Leu Gln Thr Met	Leu Lys Pro Gly Gly	Gln Val Asp Gly Asp Glu
2130	2135	2140
Ala Leu Glu Phe Tyr	Ala Lys His Thr Ala	Gln Ile Glu Ile Val Arg
2145	2150	2155
Leu Asp Arg Thr Met	Glu Gln Ile Val Phe	Pro Val Pro Ser Ile Cys
2165	2170	2175
Glu Phe Leu Thr Lys	Glu Ser Lys Leu Arg	Ile Tyr Tyr Thr Thr Glu
2180	2185	2190
Arg Asp Glu Gln Gly	Ser Lys Ile Asn Asp	Phe Phe Leu Arg Ser Glu
2195	2200	2205
Asp Leu Phe Asn Glu	Met Asn Trp Gln Lys	Lys Leu Arg Ala Gln Pro
2210	2215	2220
Val Leu Tyr Trp Cys	Ala Arg Asn Met Ser	Phe Trp Ser Ser Ile Ser
2225	2230	2235
Phe Asn Leu Ala Val	Leu Met Asn Leu Leu	Val Ala Phe Phe Tyr Pro
2245	2250	2255
Phe Lys Gly Val Arg	Gly Gly Thr Leu Glu	Pro His Trp Ser Gly Leu
2260	2265	2270
Leu Trp Thr Ala Met	Leu Ile Ser Leu Ala	Ile Val Ile Ala Leu Pro
2275	2280	2285
Lys Pro His Gly Ile	Arg Ala Leu Ile Ala	Ser Thr Ile Leu Arg Leu
2290	2295	2300
Ile Phe Ser Val Gly	Leu Gln Pro Thr Leu	Phe Leu Leu Gly Ala Phe
2305	2310	2315
Asn Val Cys Asn Lys	Ile Ile Phe Leu Met	Ser Phe Val Gly Asn Cys
2325	2330	2335
Gly Thr Phe Thr Arg	Gly Tyr Arg Ala Met	Val Leu Asp Val Glu Phe
2340	2345	2350
Leu Tyr His Leu Leu	Tyr Leu Leu Ile Cys	Ala Met Gly Leu Phe Val
2355	2360	2365
His Glu Phe Phe Tyr	Ser Leu Leu Leu Phe	Asp Leu Val Tyr Arg Glu
2370	2375	2380
Glu Thr Leu Leu Asn	Val Ile Lys Ser Val	Thr Arg Asn Gly Arg Pro
2385	2390	2395
Ile Ile Leu Thr Ala	Ala Ala Leu Ala Leu	Ile Leu Val Tyr Leu Phe Ser
2405	2410	2415
Ile Val Gly Tyr Leu	Phe Phe Lys Asp Asp	Phe Ile Leu Glu Val Asp
2420	2425	2430
Arg Leu Pro Asn Glu	Thr Ala Gly Pro Glu	Thr Gly Glu Ser Leu Ala
2435	2440	2445
Asn Asp Phe Leu Tyr	Ser Asp Val Cys Arg	Val Glu Thr Gly Glu Asn
2450	2455	2460
Cys Thr Ser Pro Ala	Pro Lys Glu Glu Leu	Leu Pro Val Glu Glu Thr
2465	2470	2475
Glu Gln Asp Lys Glu	His Thr Cys Glu Thr	Leu Leu Met Cys Ile Val
2485	2490	2495
Thr Val Leu Ser His	Gly Leu Arg Ser Gly	Gly Gly Val Gly Asp Val
2500	2505	2510
Leu Arg Lys Pro Ser	Lys Glu Glu Pro Leu	Phe Ala Ala Arg Val Ile
2515	2520	2525

```

Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Ile Val Leu Asn Leu
2530                2535                2540
Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
2545                2550                2555                2560
Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
                2565                2570                2575
Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
                2580                2585                2590
Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
                2595                2600                2605
Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala
                2610                2615                2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala
2625                2630                2635                2640
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg
                2645                2650                2655
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu
                2660                2665                2670
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys
                2675                2680                2685
Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val
                2690                2695                2700
Asn Pro Gln Gln Pro Ala
2705                2710

```

<210> 16

<211> 2749

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
synthetic construct

<400> 16

```

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser
1          5          10          15
Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
                20          25          30
Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
                35          40          45
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
                50          55          60
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
65          70          75          80
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
                85          90          95
Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
                100         105         110
Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
                115         120         125
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
                130         135         140
Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
145         150         155         160
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
                165         170         175
Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
                180         185         190
Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu

```

										195											200											205	
Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Val	Leu	Phe	Met																		
										210											215											220	
Lys	Trp	Ser	Asp	Asn	Lys	Asp	Asp	Ile	Leu	Lys	Gly	Gly	Asp	Val	Val																		
225											230											235											240
Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His																		
										245											250											255	
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala																		
										260											265											270	
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln																		
										275											280											285	
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg																		
										290											295											300	
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro																		
305											310											315											320
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp																		
										325											330											335	
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg	Asn	Ala	Gln	Glu	Lys	Met	Val																		
										340											345											350	
Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe																		
										355											360											365	
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg																		
										370											375											380	
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His																		
385											390											395											400
Ser	Thr	Asn	Ile	Pro	Ile	Asp	Lys	Glu	Glu	Glu	Lys	Pro	Val	Met	Leu																		
										405											410											415	
Lys	Ile	Gly	Thr	Ser	Pro	Leu	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile																		
										420											425											430	
Val	Pro	Val	Ser	Pro	Ala	Glu	Val	Arg	Asp	Leu	Asp	Phe	Ala	Asn	Asp																		
										435											440											445	
Ala	Ser	Lys	Val	Leu	Gly	Ser	Ile	Ala	Gly	Lys	Leu	Glu	Lys	Gly	Thr																		
										450											455											460	
Ile	Thr	Gln	Asn	Glu	Arg	Arg	Ser	Val	Thr	Lys	Leu	Leu	Glu	Asp	Leu																		
465											470											475											480
Val	Tyr	Phe	Val	Thr	Gly	Gly	Thr	Asn	Ser	Gly	Gln	Asp	Val	Leu	Glu																		
										485											490											495	
Val	Val	Phe	Ser	Lys	Pro	Asn	Arg	Glu	Arg	Gln	Lys	Leu	Met	Arg	Glu																		
										500											505											510	
Gln	Asn	Ile	Leu	Lys	Gln	Ile	Phe	Lys	Leu	Leu	Gln	Ala	Pro	Phe	Thr																		
										515											520											525	
Asp	Cys	Gly	Asp	Gly	Pro	Met	Leu	Arg	Leu	Glu	Glu	Leu	Gly	Asp	Gln																		
										530											535											540	
Arg	His	Ala	Pro	Phe	Arg	His	Ile	Cys	Arg	Leu	Cys	Tyr	Arg	Val	Leu																		
545											550											555											560
Arg	His	Ser	Gln	Gln	Asp	Tyr	Arg	Lys	Asn	Gln	Glu	Tyr	Ile	Ala	Lys																		
										565											570											575	
Gln	Phe	Gly	Phe	Met	Gln	Lys	Gln	Ile	Gly	Tyr	Asp	Val	Leu	Ala	Glu																		
										580											585											590	
Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys																		
										595											600											605	
His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys																		
										610											615											620	
Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser																		
625											630											635											640
Met	Asn	Lys	Ser	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Ala	Val																		
										645											650											655	
Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Ile	Glu	Thr	Lys	Leu	Val	Leu																		
										660											665											670	
Ser	Arg	Phe	Glu	Phe	Glu	Gly	Val	Ser	Thr	Gly	Glu	Asn	Ala	Leu	Glu																		
										675											680											685	

Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn	690	695	700
Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys	705	710	715
Glu	Gly	Gln	Lys	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln	725	730	735
Leu	Asn	Leu	Phe	Ala	Arg	Met	Cys	Leu	Asp	Arg	Gln	Tyr	Leu	Ala	Ile	740	745	750
Asn	Glu	Ile	Ser	Gly	Gln	Leu	Asp	Val	Asp	Leu	Ile	Leu	Arg	Cys	Met	755	760	765
Ser	Asp	Glu	Asn	Leu	Pro	Tyr	Asp	Leu	Arg	Ala	Ser	Phe	Cys	Arg	Leu	770	775	780
Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro	785	790	795
Val	Lys	Tyr	Ala	Arg	Leu	Trp	Ser	Glu	Ile	Pro	Ser	Glu	Ile	Ala	Ile	805	810	815
Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg	820	825	830
Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arg	Asp	Val	Val	835	840	845
Cys	Gln	Arg	Phe	Pro	Phe	Ser	Asp	Lys	Glu	Lys	Asn	Lys	Leu	Thr	Phe	850	855	860
Glu	Val	Val	Asn	Leu	Ala	Arg	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Asn	865	870	875
Phe	Ser	Asp	Leu	Leu	Arg	Leu	Thr	Lys	Ile	Leu	Leu	Ala	Ile	Leu	Asp	885	890	895
Cys	Val	His	Val	Thr	Thr	Ile	Phe	Pro	Ile	Ser	Lys	Met	Thr	Lys	Gly	900	905	910
Glu	Glu	Asn	Lys	Gly	Ser	Asn	Val	Met	Arg	Ser	Ile	His	Gly	Val	Gly	915	920	925
Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met	930	935	940
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro	945	950	955
Glu	Lys	Glu	Asp	Ile	Met	Val	Met	Asp	Thr	Lys	Leu	Lys	Ile	Ile	Glu	965	970	975
Ile	Leu	Gln	Phe	Ile	Leu	Asn	Val	Arg	Leu	Asp	Tyr	Arg	Ile	Ser	Cys	980	985	990
Leu	Leu	Cys	Ile	Phe	Lys	Arg	Glu	Phe	Asp	Glu	Ser	Asn	Ser	Gln	Ser	995	1000	1005
Ser	Glu	Thr	Ser	Ser	Gly	Asn	Ser	Ser	Gln	Glu	Gly	Pro	Ser	Asn	Val	1010	1015	1020
Pro	Gly	Ala	Leu	Asp	Phe	Glu	His	Ile	Glu	Glu	Gln	Ala	Glu	Gly	Ile	1025	1030	1035
Phe	Gly	Gly	Ser	Glu	Glu	Asn	Thr	Pro	Leu	Asp	Leu	Asp	Asp	His	Gly	1045	1050	1055
Gly	Arg	Thr	Phe	Leu	Arg	Val	Leu	Leu	His	Leu	Thr	Met	His	Asp	Tyr	1060	1065	1070
Pro	Pro	Leu	Val	Ser	Gly	Ala	Leu	Gln	Leu	Leu	Phe	Arg	His	Phe	Ser	1075	1080	1085
Gln	Arg	Gln	Glu	Val	Leu	Gln	Ala	Phe	Lys	Gln	Val	Gln	Leu	Leu	Val	1090	1095	1100
Thr	Ser	Gln	Asp	Val	Asp	Asn	Tyr	Lys	Gln	Ile	Lys	Gln	Asp	Leu	Asp	1105	1110	1115
Gln	Leu	Arg	Ser	Ile	Val	Glu	Lys	Ser	Glu	Leu	Trp	Val	Tyr	Lys	Gly	1125	1130	1135
Gln	Gly	Pro	Asp	Glu	Pro	Met	Asp	Gly	Ala	Ser	Gly	Glu	Asn	Glu	His	1140	1145	1150
Lys	Lys	Thr	Glu	Glu	Gly	Thr	Ser	Lys	Pro	Leu	Lys	His	Glu	Ser	Thr	1155	1160	1165
Ser	Ser	Tyr	Asn	Tyr	Arg	Val	Val	Lys	Glu	Ile	Leu	Ile	Arg	Leu	Ser			

1170	1175	1180
Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln		
1185	1190	1195
Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu		1200
1205	1210	1215
Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu		
1220	1225	1230
Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn		
1235	1240	1245
Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn		
1250	1255	1260
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn		
1265	1270	1275
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val		1280
1285	1290	1295
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu		
1300	1305	1310
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp		
1315	1320	1325
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe		
1330	1335	1340
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser		
1345	1350	1355
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile		1360
1365	1370	1375
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr		
1380	1385	1390
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg		
1395	1400	1405
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile		
1410	1415	1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu		
1425	1430	1435
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val		1440
1445	1450	1455
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp		
1460	1465	1470
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr		
1475	1480	1485
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr		
1490	1495	1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr		
1505	1510	1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys		1520
1525	1530	1535
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro		
1540	1545	1550
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn		
1555	1560	1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala		
1570	1575	1580
Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile		
1585	1590	1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg		
1605	1610	1615
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg		
1620	1625	1630
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu		
1635	1640	1645
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu		
1650	1655	1660

Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
 1665 1670 1675 1680
 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile
 1685 1690 1695
 Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn
 1700 1705 1710
 Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp
 1715 1720 1725
 His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr
 1730 1735 1740
 Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Asp Leu Thr Ser Phe Gly
 1745 1750 1755 1760
 Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly
 1765 1770 1775
 Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala
 1780 1785 1790
 Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile
 1795 1800 1805
 Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile
 1810 1815 1820
 Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His
 1825 1830 1835 1840
 Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe
 1845 1850 1855
 Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala
 1860 1865 1870
 Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp
 1875 1880 1885
 Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr
 1890 1895 1900
 Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala
 1905 1910 1915 1920
 Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp
 1925 1930 1935
 Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala
 1940 1945 1950
 Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile
 1955 1960 1965
 Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln
 1970 1975 1980
 Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys
 1985 1990 1995 2000
 Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly
 2005 2010 2015
 Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile
 2020 2025 2030
 Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
 2035 2040 2045
 Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile
 2050 2055 2060
 Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg
 2065 2070 2075 2080
 Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu
 2085 2090 2095
 Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu
 2100 2105 2110
 Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr
 2115 2120 2125
 Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly
 2130 2135 2140
 Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His

2145	2150	2155	2160
Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly			
	2165	2170	2175
Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr			
	2180	2185	2190
Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val			
	2195	2200	2205
Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu			
	2210	2215	2220
Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn			
	2225	2230	2235
Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln			
	2245	2250	2255
Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met			
	2260	2265	2270
Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu			
	2275	2280	2285
Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu			
	2290	2295	2300
Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu			
	2305	2310	2315
Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile			
	2325	2330	2335
Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr			
	2340	2345	2350
Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu			
	2355	2360	2365
Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala			
	2370	2375	2380
Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile			
	2385	2390	2395
Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu			
	2405	2410	2415
Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser			
	2420	2425	2430
Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu			
	2435	2440	2445
Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp			
	2450	2455	2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro			
	2465	2470	2475
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys			
	2485	2490	2495
Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu			
	2500	2505	2510
Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu			
	2515	2520	2525
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser			
	2530	2535	2540
Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro			
	2545	2550	2555
Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Phe Met Val			
	2565	2570	2575
Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe			
	2580	2585	2590
Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr			
	2595	2600	2605
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr			
	2610	2615	2620
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr			
	2625	2630	2635
			2640

Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr
 2645 2650 2655
 Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp
 2660 2665 2670
 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu
 2675 2680 2685
 Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
 2690 2695 2700
 Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp
 2705 2710 2715 2720
 Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly
 2725 2730 2735
 His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala
 2740 2745

<210> 17

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 17

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser
 1 5 10 15
 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
 20 25 30
 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
 35 40 45
 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
 50 55 60
 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
 65 70 75 80
 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
 85 90 95
 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
 100 105 110
 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
 115 120 125
 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
 130 135 140
 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
 145 150 155 160
 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
 165 170 175
 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
 180 185 190
 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
 195 200 205
 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
 210 215 220
 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
 225 230 235 240
 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His
 245 250 255
 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
 260 265 270
 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln

	275		280		285	
His	Asp	Pro	Cys	Arg	Gly	Gly
	290				295	
Phe	Lys	His	Leu	Ala	Thr	Gly
305					310	
Asp	Phe	Glu	Glu	Glu	Cys	Leu
					325	
Gln	Asp	Ala	Ser	Arg	Ser	Arg
					340	
Tyr	Ser	Leu	Val	Ser	Val	Pro
					355	
Glu	Leu	Asp	Pro	Thr	Thr	Leu
					370	
Asn	Ser	Tyr	Val	Arg	Leu	Arg
385					390	
Ser	Thr	Asn	Ile	Pro	Ile	Asp
					405	
Lys	Ile	Gly	Thr	Ser	Pro	Leu
					420	
Val	Pro	Val	Ser	Pro	Ala	Glu
					435	
Ala	Ser	Lys	Val	Leu	Gly	Ser
					450	
Ile	Thr	Gln	Asn	Glu	Arg	Arg
465					470	
Val	Tyr	Phe	Val	Thr	Gly	Gly
					485	
Val	Val	Phe	Ser	Lys	Pro	Asn
					500	
Gln	Asn	Ile	Leu	Lys	Gln	Ile
					515	
Asp	Cys	Gly	Asp	Gly	Pro	Met
					530	
Arg	His	Ala	Pro	Phe	Arg	His
545					550	
Arg	His	Ser	Gln	Gln	Asp	Tyr
					565	
Gln	Phe	Gly	Phe	Met	Gln	Lys
					580	
Asp	Thr	Ile	Thr	Ala	Leu	Leu
					595	
His	Ile	Thr	Ala	Ala	Glu	Ile
					610	
Asn	Arg	Glu	Pro	Arg	Phe	Leu
625					630	
Met	Asn	Lys	Ser	Ile	Pro	Val
					645	
Leu	Asn	Pro	Thr	Asn	Ala	Asp
					660	
Ser	Arg	Phe	Glu	Phe	Glu	Gly
					675	
Ala	Gly	Glu	Asp	Glu	Glu	Glu
					690	
Lys	Glu	Ile	Arg	Ser	Lys	Ser
705					710	
Glu	Gly	Gln	Lys	Glu	Asp	Arg
					725	
Leu	Asn	Leu	Phe	Ala	Arg	Met
					740	
Asn	Glu	Ile	Ser	Gly	Gln	Leu
					755	
						280
						285
						290
						295
						300
						305
						310
						315
						320
						325
						330
						335
						340
						345
						350
						355
						360
						365
						370
						375
						380
						385
						390
						395
						400
						405
						410
						415
						420
						425
						430
						435
						440
						445
						450
						455
						460
						465
						470
						475
						480
						485
						490
						495
						500
						505
						510
						515
						520
						525
						530
						535
						540
						545
						550
						555
						560
						565
						570
						575
						580
						585
						590
						595
						600
						605
						610
						615
						620
						625
						630
						635
						640
						645
						650
						655
						660
						665
						670
						675
						680
						685
						690
						695
						700
						705
						710
						715
						720
						725
						730
						735
						740
						745
						750
						755
						760
						765

Ser	Asp	Glu	Asn	Leu	Pro	Tyr	Asp	Leu	Arg	Ala	Ser	Phe	Cys	Arg	Leu	770	775	780
Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro	785	790	800
Val	Lys	Tyr	Ala	Arg	Leu	Trp	Ser	Glu	Ile	Pro	Ser	Glu	Ile	Ala	Ile	805	810	815
Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg	820	825	830
Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arg	Asp	Val	Val	835	840	845
Cys	Gln	Arg	Phe	Pro	Phe	Ser	Asp	Lys	Glu	Lys	Asn	Lys	Leu	Thr	Phe	850	855	860
Glu	Val	Val	Asn	Leu	Ala	Arg	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Asn	865	870	880
Phe	Ser	Asp	Leu	Leu	Arg	Leu	Thr	Lys	Ile	Leu	Leu	Ala	Ile	Leu	Asp	885	890	895
Cys	Val	His	Val	Thr	Thr	Ile	Phe	Pro	Ile	Ser	Lys	Met	Thr	Lys	Gly	900	905	910
Glu	Glu	Asn	Lys	Gly	Ser	Asn	Val	Met	Arg	Ser	Ile	His	Gly	Val	Gly	915	920	925
Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met	930	935	940
Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro	945	950	955
Glu	Lys	Glu	Asp	Ile	Met	Val	Met	Asp	Thr	Lys	Leu	Lys	Ile	Ile	Glu	965	970	975
Ile	Leu	Gln	Phe	Ile	Leu	Asn	Val	Arg	Leu	Asp	Tyr	Arg	Ile	Ser	Cys	980	985	990
Leu	Leu	Cys	Ile	Phe	Lys	Arg	Glu	Phe	Asp	Glu	Ser	Asn	Ser	Gln	Ser	995	1000	1005
Ser	Glu	Thr	Ser	Ser	Gly	Asn	Ser	Ser	Gln	Glu	Gly	Pro	Ser	Asn	Val	1010	1015	1020
Pro	Gly	Ala	Leu	Asp	Phe	Glu	His	Ile	Glu	Glu	Gln	Ala	Glu	Gly	Ile	1025	1030	1035
Phe	Gly	Gly	Ser	Glu	Glu	Asn	Thr	Pro	Leu	Asp	Leu	Asp	Asp	His	Gly	1045	1050	1055
Gly	Arg	Thr	Phe	Leu	Arg	Val	Leu	Leu	His	Leu	Thr	Met	His	Asp	Tyr	1060	1065	1070
Pro	Pro	Leu	Val	Ser	Gly	Ala	Leu	Gln	Leu	Leu	Phe	Arg	His	Phe	Ser	1075	1080	1085
Gln	Arg	Gln	Glu	Val	Leu	Gln	Ala	Phe	Lys	Gln	Val	Gln	Leu	Leu	Val	1090	1095	1100
Thr	Ser	Gln	Asp	Val	Asp	Asn	Tyr	Lys	Gln	Ile	Lys	Gln	Asp	Leu	Asp	1105	1110	1115
Gln	Leu	Arg	Ser	Ile	Val	Glu	Lys	Ser	Glu	Leu	Trp	Val	Tyr	Lys	Gly	1125	1130	1135
Gln	Gly	Pro	Asp	Glu	Pro	Met	Asp	Gly	Ala	Ser	Gly	Glu	Asn	Glu	His	1140	1145	1150
Lys	Lys	Thr	Glu	Glu	Gly	Thr	Ser	Lys	Pro	Leu	Lys	His	Glu	Ser	Thr	1155	1160	1165
Ser	Ser	Tyr	Asn	Tyr	Arg	Val	Val	Lys	Glu	Ile	Leu	Ile	Arg	Leu	Ser	1170	1175	1180
Lys	Leu	Cys	Val	Gln	Glu	Ser	Ala	Ser	Val	Arg	Lys	Ser	Arg	Lys	Gln	1185	1190	1195
Gln	Gln	Arg	Leu	Leu	Arg	Asn	Met	Gly	Ala	His	Ala	Val	Val	Leu	Glu	1205	1210	1215
Leu	Leu	Gln	Ile	Pro	Tyr	Glu	Lys	Ala	Glu	Asp	Thr	Lys	Met	Gln	Glu	1220	1225	1230
Ile	Met	Arg	Leu	Ala	His	Glu	Phe	Leu	Gln	Asn	Phe	Cys	Ala	Gly	Asn	1235	1240	1245
Gln	Gln	Asn	Gln	Ala	Leu	Leu	His	Lys	His	Ile	Asn	Leu	Phe	Leu	Asn			

1250	1255	1260
Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn		
1265	1270	1275
Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val		1280
	1285	1290
His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu		1295
	1300	1305
Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp		1310
	1315	1320
Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe		1325
	1330	1335
Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser		1340
1345	1350	1355
Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile		1360
	1365	1370
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr		1375
	1380	1385
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg		1390
	1395	1400
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile		1405
	1410	1415
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu		1420
1425	1430	1435
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val		1440
	1445	1450
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp		1455
	1460	1465
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr		1470
	1475	1480
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr		1485
	1490	1495
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr		1500
1505	1510	1515
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys		1520
	1525	1530
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro		1535
	1540	1545
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn		1550
	1555	1560
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala		1565
	1570	1575
Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile		1580
1585	1590	1595
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg		1600
	1605	1610
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg		1615
	1620	1625
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu		1630
	1635	1640
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu		1645
	1650	1655
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg		1660
1665	1670	1675
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu		1680
	1685	1690
Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly		1695
	1700	1705
Arg Arg Glu Ser Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly		1710
	1715	1720
Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser		1725
	1730	1735
		1740

Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp
 1745 1750 1755 1760
 Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser
 1765 1770 1775
 Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu
 1780 1785 1790
 Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr
 1795 1800 1805
 Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met
 1810 1815 1820
 Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser
 1825 1830 1835 1840
 Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro
 1845 1850 1855
 Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val
 1860 1865 1870
 Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr
 1875 1880 1885
 Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu
 1890 1895 1900
 Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser
 1905 1910 1915 1920
 Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu
 1925 1930 1935
 Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn
 1940 1945 1950
 Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp
 1955 1960 1965
 Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Leu Gly Leu Tyr
 1970 1975 1980
 Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu
 1985 1990 1995 2000
 Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala
 2005 2010 2015
 Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn
 2020 2025 2030
 Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu
 2035 2040 2045
 Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His
 2050 2055 2060
 Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu
 2065 2070 2075 2080
 Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe
 2085 2090 2095
 Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val
 2100 2105 2110
 Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys
 2115 2120 2125
 Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
 2130 2135 2140
 Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg
 2145 2150 2155 2160
 Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys
 2165 2170 2175
 Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu
 2180 2185 2190
 Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu
 2195 2200 2205
 Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro
 2210 2215 2220
 Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser

2225	2230	2235	2240
Phe Asn Leu Ala Val	Leu Met Asn Leu	Leu Val Ala Phe Phe	Tyr Pro
2245	2250	2255	
Phe Lys Gly Val Arg	Gly Gly Thr Leu	Glu Pro His Trp	Ser Gly Leu
2260	2265	2270	
Leu Trp Thr Ala Met	Leu Ile Ser Leu	Ala Ile Val Ile	Ala Leu Pro
2275	2280	2285	
Lys Pro His Gly Ile	Arg Ala Leu Ile	Ala Ser Thr Ile	Leu Arg Leu
2290	2295	2300	
Ile Phe Ser Val Gly	Leu Gln Pro Thr	Leu Phe Leu Leu	Gly Ala Phe
2305	2310	2315	2320
Asn Val Cys Asn Lys	Ile Ile Phe Leu	Met Ser Phe Val	Gly Asn Cys
2325	2330	2335	
Gly Thr Phe Thr Arg	Gly Tyr Arg Ala	Met Val Leu Asp	Val Glu Phe
2340	2345	2350	
Leu Tyr His Leu Leu	Tyr Leu Leu Ile	Cys Ala Met Gly	Leu Phe Val
2355	2360	2365	
His Glu Phe Phe Tyr	Ser Leu Leu Phe	Asp Leu Val Tyr	Arg Glu
2370	2375	2380	
Glu Thr Leu Leu Asn	Val Ile Lys Ser	Val Thr Arg Asn	Gly Arg Pro
2385	2390	2395	2400
Ile Ile Leu Thr Ala	Ala Leu Ala Leu	Ile Leu Val Tyr	Leu Phe Ser
2405	2410	2415	
Ile Val Gly Tyr Leu	Phe Phe Lys Asp	Asp Phe Ile Leu	Glu Val Asp
2420	2425	2430	
Arg Leu Pro Asn Glu	Thr Ala Gly Pro	Glu Thr Gly Glu	Ser Leu Ala
2435	2440	2445	
Asn Asp Phe Leu Tyr	Ser Asp Val Cys	Arg Val Glu Thr	Gly Glu Asn
2450	2455	2460	
Cys Thr Ser Pro Ala	Pro Lys Glu Glu	Leu Leu Pro Val	Glu Glu Thr
2465	2470	2475	2480
Glu Gln Asp Lys Glu	His Thr Cys Glu	Thr Leu Leu Met	Cys Ile Val
2485	2490	2495	
Thr Val Leu Ser His	Gly Leu Arg Ser	Gly Gly Gly Val	Gly Asp Val
2500	2505	2510	
Leu Arg Lys Pro Ser	Lys Glu Glu Pro	Leu Phe Ala Ala	Arg Val Ile
2515	2520	2525	
Tyr Asp Leu Leu Phe	Phe Phe Met Val	Ile Ile Ile Val	Leu Asn Leu
2530	2535	2540	
Ile Phe Gly Val Ile	Ile Asp Thr Phe	Ala Asp Leu Arg	Ser Glu Lys
2545	2550	2555	2560
Gln Lys Lys Glu Glu	Ile Leu Lys Thr	Thr Cys Phe Ile	Cys Gly Leu
2565	2570	2575	
Glu Arg Asp Lys Phe	Asp Asn Lys Thr	Val Thr Phe Glu	Glu His Ile
2580	2585	2590	
Lys Glu Glu His Asn	Met Trp His Tyr	Leu Cys Phe Ile	Val Leu Val
2595	2600	2605	
Lys Val Lys Asp Ser	Thr Glu Tyr Thr	Gly Pro Glu Ser	Tyr Val Ala
2610	2615	2620	
Glu Met Ile Arg Glu	Arg Asn Leu Asp	Trp Phe Pro Arg	Met Arg Ala
2625	2630	2635	2640
Met Ser Leu Val Ser	Asp Ser Glu Gly	Glu Gln Asn Glu	Leu Arg
2645	2650	2655	
Asn Leu Gln Glu Lys	Leu Glu Ser Thr	Met Lys Leu Val	Thr Asn Leu
2660	2665	2670	
Ser Gly Gln Leu Ser	Glu Leu Lys Asp	Gln Met Thr Glu	Gln Arg Lys
2675	2680	2685	
Gln Lys Gln Arg Ile	Gly Leu Leu Gly	His Pro Pro His	Met Asn Val
2690	2695	2700	
Asn Pro Gln Gln Pro	Ala		
2705	2710		

<210> 18
 <211> 2749
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 18
 Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser
 1 5 10 15
 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
 20 25 30
 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
 35 40 45
 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
 50 55 60
 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
 65 70 75 80
 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
 85 90 95
 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
 100 105 110
 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
 115 120 125
 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
 130 135 140
 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
 145 150 155 160
 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
 165 170 175
 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
 180 185 190
 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
 195 200 205
 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
 210 215 220
 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
 225 230 235 240
 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His
 245 250 255
 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
 260 265 270
 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
 275 280 285
 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
 290 295 300
 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
 305 310 315 320
 Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
 325 330 335
 Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
 340 345 350
 Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
 355 360 365
 Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
 370 375 380
 Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His

385		390		395		400
Ser Thr Asn Ile Pro	Ile Asp Lys Glu Glu Glu Lys Pro Val Met Leu					
	405		410		415	
Lys Ile Gly Thr Ser	Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile					
	420		425		430	
Val Pro Val Ser Pro	Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp					
	435		440		445	
Ala Ser Lys Val Leu	Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr					
	450		455		460	
Ile Thr Gln Asn Glu	Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu					
465		470		475		480
Val Tyr Phe Val Thr	Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu					
	485		490		495	
Val Val Phe Ser Lys	Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu					
	500		505		510	
Gln Asn Ile Leu Lys	Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr					
	515		520		525	
Asp Cys Gly Asp Gly	Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln					
	530		535		540	
Arg His Ala Pro Phe	Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu					
545		550		555		560
Arg His Ser Gln Gln	Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys					
	565		570		575	
Gln Phe Gly Phe Met	Gln Lys Gln Ile Gly Tyr Asp Val Leu Ala Glu					
	580		585		590	
Asp Thr Ile Thr Ala	Leu Leu His Asn Asn Arg Lys Leu Leu Glu Lys					
	595		600		605	
His Ile Thr Ala Ala	Glu Ile Asp Thr Phe Val Ser Leu Val Arg Lys					
	610		615		620	
Asn Arg Glu Pro Arg	Phe Leu Asp Tyr Leu Ser Asp Leu Cys Val Ser					
625		630		635		640
Met Asn Lys Ser Ile	Pro Val Thr Gln Glu Leu Ile Cys Lys Ala Val					
	645		650		655	
Leu Asn Pro Thr Asn	Ala Asp Ile Leu Ile Glu Thr Lys Leu Val Leu					
	660		665		670	
Ser Arg Phe Glu Phe	Glu Gly Val Ser Thr Gly Glu Asn Ala Leu Glu					
	675		680		685	
Ala Gly Glu Asp Glu	Glu Glu Val Trp Leu Phe Trp Arg Asp Ser Asn					
	690		695		700	
Lys Glu Ile Arg Ser	Lys Ser Val Arg Glu Leu Ala Gln Asp Ala Lys					
705		710		715		720
Glu Gly Gln Lys Glu	Asp Arg Asp Val Leu Ser Tyr Tyr Arg Tyr Gln					
	725		730		735	
Leu Asn Leu Phe Ala	Arg Met Cys Leu Asp Arg Gln Tyr Leu Ala Ile					
	740		745		750	
Asn Glu Ile Ser Gly	Gln Leu Asp Val Asp Leu Ile Leu Arg Cys Met					
	755		760		765	
Ser Asp Glu Asn Leu	Pro Tyr Asp Leu Arg Ala Ser Phe Cys Arg Leu					
	770		775		780	
Met Leu His Met His	Val Asp Arg Asp Pro Gln Glu Gln Val Thr Pro					
785		790		795		800
Val Lys Tyr Ala Arg	Leu Trp Ser Glu Ile Pro Ser Glu Ile Ala Ile					
	805		810		815	
Asp Asp Tyr Asp Ser	Ser Gly Ala Ser Lys Asp Glu Ile Lys Glu Arg					
	820		825		830	
Phe Ala Gln Thr Met	Glu Phe Val Glu Glu Tyr Leu Arg Asp Val Val					
	835		840		845	
Cys Gln Arg Phe Pro	Phe Ser Asp Lys Glu Lys Asn Lys Leu Thr Phe					
	850		855		860	
Glu Val Val Asn Leu	Ala Arg Asn Leu Ile Tyr Phe Gly Phe Tyr Asn					
865		870		875		880

Phe Ser Asp Leu Leu Arg Leu Thr Lys Ile Leu Leu Ala Ile Leu Asp
 885 890 895
 Cys Val His Val Thr Thr Ile Phe Pro Ile Ser Lys Met Thr Lys Gly
 900 905 910
 Glu Glu Asn Lys Gly Ser Asn Val Met Arg Ser Ile His Gly Val Gly
 915 920 925
 Glu Leu Met Thr Gln Val Val Leu Arg Gly Gly Gly Phe Leu Pro Met
 930 935 940
 Thr Pro Met Ala Ala Ala Pro Glu Gly Asn Val Lys Gln Ala Glu Pro
 945 950 955 960
 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
 965 970 975
 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
 980 985 990
 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
 995 1000 1005
 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
 1010 1015 1020
 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
 1025 1030 1035 1040
 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Leu Asp Asp His Gly
 1045 1050 1055
 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
 1060 1065 1070
 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
 1075 1080 1085
 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
 1090 1095 1100
 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
 1105 1110 1115 1120
 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
 1125 1130 1135
 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
 1140 1145 1150
 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
 1155 1160 1165
 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
 1170 1175 1180
 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
 1185 1190 1195 1200
 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
 1205 1210 1215
 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
 1220 1225 1230
 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
 1235 1240 1245
 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
 1250 1255 1260
 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
 1265 1270 1275 1280
 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
 1285 1290 1295
 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
 1300 1305 1310
 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
 1315 1320 1325
 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile

	1365		1370		1375
His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr					
	1380		1385		1390
Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg					
	1395		1400		1405
Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile					
	1410		1415		1420
Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu					
1425		1430		1435	1440
Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val					
	1445		1450		1455
Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp					
	1460		1465		1470
Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr					
	1475		1480		1485
Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr					
	1490		1495		1500
Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr					
1505		1510		1515	1520
His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys					
	1525		1530		1535
Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro					
	1540		1545		1550
Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn					
	1555		1560		1565
Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala					
	1570		1575		1580
Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile					
1585		1590		1595	1600
Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg					
	1605		1610		1615
Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg					
	1620		1625		1630
Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu					
	1635		1640		1645
Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu					
	1650		1655		1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg					
1665		1670		1675	1680
Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gln Ile Ser Ile					
	1685		1690		1695
Asp Glu Leu Glu Asn Ala Glu Leu Pro Gln Pro Pro Glu Ala Glu Asn					
	1700		1705		1710
Ser Thr Glu Glu Leu Glu Pro Ser Pro Pro Leu Arg Gln Leu Glu Asp					
	1715		1720		1725
His Lys Arg Gly Glu Ala Leu Arg Gln Ile Leu Val Asn Arg Tyr Tyr					
	1730		1735		1740
Gly Asn Ile Arg Pro Ser Gly Arg Arg Glu Ser Leu Thr Ser Phe Gly					
1745		1750		1755	1760
Asn Gly Pro Leu Ser Pro Gly Gly Pro Ser Lys Pro Gly Gly Gly Gly					
	1765		1770		1775
Gly Gly Pro Gly Ser Gly Ser Thr Ser Arg Gly Glu Met Ser Leu Ala					
	1780		1785		1790
Glu Val Gln Cys His Leu Asp Lys Glu Gly Ala Ser Asn Leu Val Ile					
	1795		1800		1805
Asp Leu Ile Met Asn Ala Ser Ser Asp Arg Val Phe His Glu Ser Ile					
	1810		1815		1820
Leu Leu Ala Ile Ala Leu Leu Glu Gly Gly Asn Thr Thr Ile Gln His					
1825		1830		1835	1840
Ser Phe Phe Cys Arg Leu Thr Glu Asp Lys Lys Ser Glu Lys Phe Phe					
	1845		1850		1855

Lys Val Phe Tyr Asp Arg Met Lys Val Ala Gln Gln Glu Ile Lys Ala
 1860 1865 1870
 Thr Val Thr Val Asn Thr Ser Asp Leu Gly Asn Lys Lys Lys Asp Asp
 1875 1880 1885
 Glu Val Asp Arg Asp Ala Pro Ser Arg Lys Lys Ala Lys Glu Pro Thr
 1890 1895 1900
 Thr Gln Ile Thr Glu Glu Val Arg Asp Gln Leu Leu Glu Ala Ser Ala
 1905 1910 1915 1920
 Ala Thr Arg Lys Ala Phe Thr Thr Phe Arg Arg Glu Ala Asp Pro Asp
 1925 1930 1935
 Asp His Tyr Gln Ser Gly Glu Gly Thr Gln Ala Thr Thr Asp Lys Ala
 1940 1945 1950
 Lys Asp Asp Leu Glu Met Ser Ala Val Ile Thr Ile Met Gln Pro Ile
 1955 1960 1965
 Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln
 1970 1975 1980
 Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys
 1985 1990 1995 2000
 Glu Thr Leu Gln Phe Leu Asp Cys Ile Cys Gly Ser Thr Thr Gly Gly
 2005 2010 2015
 Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Lys Asn Val Ala Leu Ile
 2020 2025 2030
 Asn Gln Thr Leu Glu Ser Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
 2035 2040 2045
 Glu Asn Gln Asn Cys Ile Ala Thr His Glu Ser Asn Gly Ile Asp Ile
 2050 2055 2060
 Ile Thr Ala Leu Ile Leu Asn Asp Ile Asn Pro Leu Gly Lys Lys Arg
 2065 2070 2075 2080
 Met Asp Leu Val Leu Glu Leu Lys Asn Asn Ala Ser Lys Leu Leu Leu
 2085 2090 2095
 Ala Ile Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu
 2100 2105 2110
 Tyr Asn Met Arg Pro Lys Glu Leu Val Glu Val Ile Lys Lys Ala Tyr
 2115 2120 2125
 Met Gln Gly Glu Val Glu Phe Glu Asp Gly Glu Asn Gly Glu Asp Gly
 2130 2135 2140
 Ala Ala Ser Pro Arg Asn Val Gly His Asn Ile Tyr Ile Leu Ala His
 2145 2150 2155 2160
 Gln Leu Ala Arg His Asn Lys Glu Leu Gln Thr Met Leu Lys Pro Gly
 2165 2170 2175
 Gly Gln Val Asp Gly Asp Glu Ala Leu Glu Phe Tyr Ala Lys His Thr
 2180 2185 2190
 Ala Gln Ile Glu Ile Val Arg Leu Asp Arg Thr Met Glu Gln Ile Val
 2195 2200 2205
 Phe Pro Val Pro Ser Ile Cys Glu Phe Leu Thr Lys Glu Ser Lys Leu
 2210 2215 2220
 Arg Ile Tyr Tyr Thr Thr Glu Arg Asp Glu Gln Gly Ser Lys Ile Asn
 2225 2230 2235 2240
 Asp Phe Phe Leu Arg Ser Glu Asp Leu Phe Asn Glu Met Asn Trp Gln
 2245 2250 2255
 Lys Lys Leu Arg Ala Gln Pro Val Leu Tyr Trp Cys Ala Arg Asn Met
 2260 2265 2270
 Ser Phe Trp Ser Ser Ile Ser Phe Asn Leu Ala Val Leu Met Asn Leu
 2275 2280 2285
 Leu Val Ala Phe Phe Tyr Pro Phe Lys Gly Val Arg Gly Gly Thr Leu
 2290 2295 2300
 Glu Pro His Trp Ser Gly Leu Leu Trp Thr Ala Met Leu Ile Ser Leu
 2305 2310 2315 2320
 Ala Ile Val Ile Ala Leu Pro Lys Pro His Gly Ile Arg Ala Leu Ile
 2325 2330 2335
 Ala Ser Thr Ile Leu Arg Leu Ile Phe Ser Val Gly Leu Gln Pro Thr

2340	2345	2350
Leu Phe Leu Leu Gly Ala Phe Asn Val Cys Asn Lys Ile Ile Phe Leu		
2355	2360	2365
Met Ser Phe Val Gly Asn Cys Gly Thr Phe Thr Arg Gly Tyr Arg Ala		
2370	2375	2380
Met Val Leu Asp Val Glu Phe Leu Tyr His Leu Leu Tyr Leu Leu Ile		
2385	2390	2395
Cys Ala Met Gly Leu Phe Val His Glu Phe Phe Tyr Ser Leu Leu Leu		
2405	2410	2415
Phe Asp Leu Val Tyr Arg Glu Glu Thr Leu Leu Asn Val Ile Lys Ser		
2420	2425	2430
Val Thr Arg Asn Gly Arg Pro Ile Ile Leu Thr Ala Ala Leu Ala Leu		
2435	2440	2445
Ile Leu Val Tyr Leu Phe Ser Ile Val Gly Tyr Leu Phe Phe Lys Asp		
2450	2455	2460
Asp Phe Ile Leu Glu Val Asp Arg Leu Pro Asn Glu Thr Ala Gly Pro		
2465	2470	2475
Glu Thr Gly Glu Ser Leu Ala Asn Asp Phe Leu Tyr Ser Asp Val Cys		
2485	2490	2495
Arg Val Glu Thr Gly Glu Asn Cys Thr Ser Pro Ala Pro Lys Glu Glu		
2500	2505	2510
Leu Leu Pro Val Glu Glu Thr Glu Gln Asp Lys Glu His Thr Cys Glu		
2515	2520	2525
Thr Leu Leu Met Cys Ile Val Thr Val Leu Ser His Gly Leu Arg Ser		
2530	2535	2540
Gly Gly Gly Val Gly Asp Val Leu Arg Lys Pro Ser Lys Glu Glu Pro		
2545	2550	2555
Leu Phe Ala Ala Arg Val Ile Tyr Asp Leu Leu Phe Phe Phe Met Val		
2565	2570	2575
Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe		
2580	2585	2590
Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Glu Ile Leu Lys Thr		
2595	2600	2605
Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr		
2610	2615	2620
Val Thr Phe Glu Glu His Ile Lys Glu Glu His Asn Met Trp His Tyr		
2625	2630	2635
Leu Cys Phe Ile Val Leu Val Lys Val Lys Asp Ser Thr Glu Tyr Thr		
2645	2650	2655
Gly Pro Glu Ser Tyr Val Ala Glu Met Ile Arg Glu Arg Asn Leu Asp		
2660	2665	2670
Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Ser Asp Ser Glu		
2675	2680	2685
Gly Glu Gln Asn Glu Leu Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr		
2690	2695	2700
Met Lys Leu Val Thr Asn Leu Ser Gly Gln Leu Ser Glu Leu Lys Asp		
2705	2710	2715
Gln Met Thr Glu Gln Arg Lys Gln Lys Gln Arg Ile Gly Leu Leu Gly		
2725	2730	2735
His Pro Pro His Met Asn Val Asn Pro Gln Gln Pro Ala		
2740	2745	

<210> 19

<211> 2701

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
synthetic construct

<400> 19

```

Met Ser Asp Lys Met Ser Ser Phe Leu Tyr Ile Gly Asp Ile Val Ser
 1          5          10          15
Leu Tyr Ala Glu Gly Ser Val Asn Gly Phe Ile Ser Thr Leu Gly Leu
 20          25          30
Val Asp Asp Arg Cys Val Val His Pro Glu Ala Gly Asp Leu Thr Asn
 35          40          45
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Val Cys Pro Met Asn
 50          55          60
Arg Tyr Ser Ala Gln Lys Gln Tyr Trp Lys Ala Lys Gln Ala Lys Gln
 65          70          75          80
Gly Asn His Thr Glu Ala Ala Leu Leu Lys Lys Leu Gln His Ala Ala
 85          90          95
Glu Leu Glu Gln Lys Gln Asn Glu Ser Glu Asn Arg Lys Leu Leu Gly
 100          105          110
Glu Ile Val Lys Tyr Ser Lys Val Ile Gln Leu Leu His Ile Lys Ser
 115          120          125
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
 130          135          140
Asn Ala Met Arg Val Ser Leu Asp Ala Ala Gly Asn Glu Gly Ser Trp
 145          150          155          160
Phe Tyr Ile His Pro Phe Trp Lys Leu Arg Ser Glu Gly Asp Asn Ile
 165          170          175
Val Val Gly Asp Lys Val Val Leu Met Pro Val Asn Ala Gly Gln Pro
 180          185          190
Leu His Ala Ser Asn Val Glu Leu Leu Asp Asn Pro Gly Cys Lys Glu
 195          200          205
Val Asn Ala Val Asn Cys Asn Thr Ser Trp Lys Ile Thr Leu Phe Met
 210          215          220
Lys Phe Ser Ser Tyr Arg Glu Asp Val Leu Lys Gly Gly Asp Val Val
 225          230          235          240
Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Asp Tyr
 245          250          255
Glu Lys Lys Gln His Ile Phe Leu Arg Thr Thr Leu Arg Gln Ser Ala
 260          265          270
Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Ile Glu Val Val His
 275          280          285
His Asp Pro Cys Arg Gly Gly Ala Gly Gln Trp Asn Ser Leu Phe Arg
 290          295          300
Phe Lys His Leu Ala Thr Gly Asn Tyr Leu Ala Ala Glu Leu Asn Pro
 305          310          315          320
Asp Tyr Arg Asp Ala Gln Asn Glu Gly Lys Thr Val Arg Asp Gly Glu
 325          330          335
Leu Pro Thr Ser Lys Lys Lys His Gln Ala Gly Glu Lys Ile Met Tyr
 340          345          350
Thr Leu Val Ser Val Pro His Gly Asn Asp Ile Ala Ser Leu Phe Glu
 355          360          365
Leu Asp Ala Thr Thr Leu Gln Arg Ala Asp Cys Leu Val Pro Arg Asn
 370          375          380
Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val Thr Ser
 385          390          395          400
Thr Ser Ile Pro Ile Asp Thr Glu Glu Glu Arg Pro Val Met Leu Lys
 405          410          415
Ile Gly Thr Cys Gln Thr Lys Glu Asp Lys Glu Ala Phe Ala Ile Val
 420          425          430
Cys Val Pro Leu Ser Glu Val Arg Asp Leu Asp Phe Ala Asn Asp Ala
 435          440          445
Asn Lys Val Leu Ala Thr Thr Val Lys Lys Leu Glu Asn Gly Ser Ile
 450          455          460
Thr Gln Asn Glu Arg Arg Phe Val Thr Lys Leu Leu Glu Asp Leu Ile

```


Gln Glu Asp Val Thr Val Met Asp Thr Lys Leu Lys Val Ile Glu Ile
 965 970 975
 Leu Gln Phe Ile Leu Ser Val Arg Leu Asp Tyr Arg Ile Ser Tyr Met
 980 985 990
 Leu Ser Ile Tyr Lys Lys Glu Phe Gly Glu Asn Asp Gly Asn Gly Asp
 995 1000 1005
 Pro Ser Ala Ser Gly Thr Pro Glu Thr Leu Leu Pro Ser Ala Leu Val
 1010 1015 1020
 Pro Asp Ile Asp Glu Ile Ala Ala Gln Ala Glu Thr Met Phe Ala Gly
 1025 1030 1035 1040
 Arg Lys Glu Lys Thr Pro Val Gln Leu Asp Asp Glu Gly Gly Arg Thr
 1045 1050 1055
 Phe Leu Arg Val Leu Ile His Leu Ile Met His Asp Tyr Ala Pro Leu
 1060 1065 1070
 Leu Ser Gly Ala Leu Gln Leu Leu Phe Lys His Phe Ser Gln Arg Ala
 1075 1080 1085
 Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val Ser Asn Gln
 1090 1095 1100
 Asp Val Asp Asn Tyr Lys Gln Ile Lys Ala Asp Leu Asp Gln Leu Arg
 1105 1110 1115 1120
 Leu Thr Val Glu Lys Ser Glu Leu Trp Val Glu Lys Ser Gly Ser Tyr
 1125 1130 1135
 Glu Asn Gly Asp Met Gly Glu Gly Gln Ala Lys Gly Gly Glu Glu Ala
 1140 1145 1150
 Asn Glu Glu Ser Asn Leu Leu Ser Pro Val Gln Asp Gly Ala Lys Thr
 1155 1160 1165
 Pro Gln Ile Asp Ser Asn Lys Gly Asn Asn Tyr Arg Ile Val Lys Glu
 1170 1175 1180
 Ile Leu Ile Arg Leu Ser Lys Leu Cys Val Gln Asn Lys Lys Cys Arg
 1185 1190 1195 1200
 Asn Gln His Gln Arg Leu Leu Lys Asn Met Gly Ala His Ser Val Val
 1205 1210 1215
 Leu Asp Leu Leu Gln Ile Pro Tyr Glu Lys Thr Asp Glu Lys Met Asn
 1220 1225 1230
 Glu Val Met Asp Leu Ala His Thr Phe Leu Gln Asn Phe Cys Arg Gly
 1235 1240 1245
 Asn Pro Gln Asn Gln Val Leu Leu His Lys His Leu Asn Leu Phe Leu
 1250 1255 1260
 Thr Pro Gly Leu Leu Glu Ala Glu Thr Met Arg His Ile Phe Met Asn
 1265 1270 1275 1280
 Asn Tyr His Leu Cys Asn Glu Ile Ser Glu Arg Val Val Gln His Phe
 1285 1290 1295
 Val His Cys Ile Glu Thr His Gly Arg His Val Glu Tyr Leu Arg Phe
 1300 1305 1310
 Leu Gln Thr Ile Val Lys Ala Asp Gly Lys Tyr Val Lys Lys Cys Gln
 1315 1320 1325
 Asp Met Val Met Thr Glu Leu Ile Asn Gly Gly Glu Asp Val Leu Ile
 1330 1335 1340
 Phe Tyr Asn Asp Arg Ala Ser Phe Pro Ile Leu Leu Asn Met Met Cys
 1345 1350 1355 1360
 Ser Glu Arg Ala Arg Gly Asp Glu Ser Gly Pro Leu Ala Tyr His Ile
 1365 1370 1375
 Thr Leu Val Glu Leu Leu Ala Ala Cys Thr Glu Gly Lys Asn Val Tyr
 1380 1385 1390
 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 1395 1400 1405
 Val Val Thr His Asp Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Val
 1410 1415 1420
 Asn Phe Val Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Ile Trp Lys Leu Phe Glu Asn Phe Leu Val

				1445					1450					1455	
Asp	Met	Ala	Arg	Val	Cys	Asn	Thr	Thr	Thr	Asp	Arg	Lys	His	Ala	Asp
				1460					1465					1470	
Thr	Phe	Leu	Glu	Arg	Cys	Val	Thr	Glu	Ser	Val	Met	Asn	Ile	Val	Ser
				1475					1480					1485	
Gly	Phe	Phe	Asn	Ser	Pro	Phe	Ser	Asp	Asn	Ser	Thr	Ser	Leu	Gln	Thr
				1490					1495					1500	
His	Gln	Pro	Val	Phe	Ile	Gln	Leu	Leu	Gln	Ser	Ala	Phe	Arg	Ile	Tyr
1505						1510					1515				1520
Asn	Cys	Thr	Trp	Pro	Asn	Pro	Ala	Gln	Lys	Ala	Ser	Val	Glu	Ser	Cys
				1525						1530				1535	
Ile	Arg	Ala	Leu	Ala	Glu	Val	Ala	Lys	Asn	Arg	Gly	Ile	Ala	Ile	Pro
				1540					1545					1550	
Val	Asp	Leu	Asp	Ser	Gln	Val	Asn	Thr	Leu	Phe	Met	Lys	Asn	His	Ser
				1555				1560					1565		
Ser	Thr	Val	Gln	Arg	Ala	Ala	Met	Gly	Trp	Arg	Leu	Ser	Ala	Arg	Ser
				1570			1575					1580			
Gly	Pro	Arg	Phe	Lys	Glu	Ala	Leu	Gly	Gly	Pro	Ala	Trp	Asp	Tyr	Arg
1585					1590					1595					1600
Asn	Ile	Ile	Glu	Lys	Leu	Gln	Asp	Val	Val	Ala	Ser	Leu	Glu	Gln	Gln
				1605						1610				1615	
Phe	Ser	Pro	Met	Met	Gln	Ala	Glu	Phe	Ser	Val	Leu	Val	Asp	Val	Leu
				1620					1625					1630	
Tyr	Ser	Pro	Glu	Leu	Leu	Phe	Pro	Glu	Gly	Ser	Asp	Ala	Arg	Ile	Arg
				1635				1640					1645		
Cys	Gly	Ala	Phe	Met	Ser	Lys	Leu	Ile	Asn	His	Thr	Lys	Lys	Leu	Met
				1650			1655				1660				
Glu	Lys	Glu	Glu	Lys	Leu	Cys	Ile	Lys	Ile	Leu	Gln	Thr	Leu	Arg	Glu
1665					1670					1675				1680	
Met	Leu	Glu	Lys	Lys	Asp	Ser	Phe	Met	Glu	Glu	Ser	Ser	Thr	Leu	Arg
				1685					1690					1695	
Lys	Ile	Leu	Leu	Asn	Arg	Tyr	Phe	Lys	Gly	Asp	His	Ser	Val	Gly	Val
				1700				1705					1710		
Asn	Gly	Pro	Leu	Ser	Gly	Ala	Tyr	Ala	Lys	Thr	Ala	Gln	Val	Gly	Gly
				1715				1720				1725			
Gly	Phe	Thr	Gly	Gln	Asp	Ala	Asp	Lys	Thr	Gly	Ile	Ser	Met	Ser	Asp
				1730			1735				1740				
Ile	Gln	Cys	Leu	Leu	Asp	Lys	Glu	Gly	Ala	Ser	Glu	Leu	Val	Ile	Asp
1745					1750					1755				1760	
Val	Ile	Val	Asn	Thr	Lys	Asn	Asp	Arg	Ile	Phe	Ser	Glu	Gly	Ile	Leu
				1765					1770					1775	
Leu	Gly	Ile	Ala	Leu	Leu	Glu	Gly	Gly	Asn	Thr	Gln	Thr	Gln	Asn	Ser
				1780				1785					1790		
Phe	Tyr	Gln	Gln	Leu	His	Glu	Gln	Lys	Lys	Ser	Glu	Lys	Phe	Phe	Lys
				1795				1800				1805			
Val	Leu	Tyr	Asp	Arg	Met	Lys	Ala	Ala	Gln	Lys	Glu	Ile	Arg	Ser	Thr
				1810			1815				1820				
Val	Thr	Val	Asn	Thr	Ile	Asp	Leu	Gly	Ser	Lys	Lys	Arg	Glu	Glu	Asp
1825					1830					1835				1840	
Ser	Asp	Leu	Met	Ala	Leu	Gly	Pro	Arg	Met	Arg	Val	Arg	Asp	Ser	Ser
				1845					1850				1855		
Leu	His	Leu	Lys	Glu	Gly	Met	Lys	Gly	Gln	Leu	Thr	Glu	Ala	Ser	Ser
				1860				1865				1870			
Ala	Thr	Ser	Lys	Ala	Tyr	Cys	Val	Tyr	Arg	Arg	Glu	Met	Asp	Pro	Asp
				1875				1880				1885			
Ile	Asp	Thr	Met	Cys	Pro	Gly	Gln	Glu	Ala	Gly	Ser	Ala	Glu	Glu	Lys
				1890			1895				1900				
Ser	Ala	Glu	Glu	Val	Thr	Met	Ser	Pro	Ala	Ile	Thr	Ile	Met	Arg	Pro
1905					1910					1915				1920	
Ile	Leu	Arg	Phe	Leu	Gln	Leu	Leu	Cys	Glu	Asn	His	Asn	Arg	Glu	Leu

1925					1930					1935					
Gln	Asn	Phe	Leu	Arg	Asn	Gln	Asn	Asn	Lys	Thr	Asn	Tyr	Asn	Leu	Val
1940					1945					1950					
Cys	Glu	Thr	Leu	Gln	Phe	Leu	Asp	Cys	Ile	Cys	Gly	Ser	Thr	Thr	Gly
1955					1960					1965					
Gly	Leu	Gly	Leu	Leu	Gly	Leu	Tyr	Ile	Asn	Glu	Lys	Asn	Val	Ala	Leu
1970					1975					1980					
Val	Asn	Gln	Thr	Leu	Glu	Ser	Leu	Thr	Glu	Tyr	Cys	Gln	Gly	Pro	Cys
1985					1990					1995					
His	Glu	Asn	Gln	Thr	Cys	Ile	Ala	Thr	His	Glu	Ser	Asn	Gly	Ile	Asp
2005					2010					2015					
Ile	Ile	Ile	Ala	Leu	Ile	Leu	Ser	Asp	Ile	Asn	Pro	Leu	Gly	Lys	Tyr
2020					2025					2030					
Arg	Met	Asp	Leu	Val	Leu	Gln	Leu	Lys	Asn	Asn	Ala	Ser	Lys	Leu	Leu
2035					2040					2045					
Leu	Ala	Ile	Met	Glu	Ser	Arg	His	Asp	Ser	Glu	Asn	Ala	Glu	Arg	Ile
2050					2055					2060					
Leu	Phe	Asn	Met	Arg	Pro	Lys	Glu	Leu	Val	Asp	Val	Met	Lys	Asn	Ala
2065					2070					2075					
Tyr	Asn	Gln	Gly	Leu	Glu	Cys	Asn	His	Gly	Asp	Glu	Glu	Gly	Gly	Asp
2085					2090					2095					
Asp	Gly	Val	Ser	Pro	Lys	Asp	Val	Gly	His	Asn	Ile	Tyr	Ile	Leu	Ala
2100					2105					2110					
His	Gln	Leu	Ala	Arg	His	Asn	Lys	Leu	Leu	Gln	Gln	Met	Leu	Lys	Pro
2115					2120					2125					
Gly	Ser	Asp	Pro	Glu	Glu	Gly	Asp	Glu	Ala	Leu	Lys	Tyr	Tyr	Ala	Asn
2130					2135					2140					
His	Thr	Ala	Gln	Ile	Glu	Ile	Val	Arg	His	Asp	Arg	Thr	Met	Glu	Gln
2145					2150					2155					
Ile	Val	Phe	Pro	Val	Pro	Asn	Ile	Cys	Glu	Phe	Leu	Thr	Arg	Glu	Ser
2165					2170					2175					
Lys	Tyr	Arg	Val	Phe	Asn	Thr	Thr	Glu	Arg	Asp	Glu	Gln	Gly	Ser	Lys
2180					2185					2190					
Val	Asn	Asp	Phe	Phe	Gln	Gln	Thr	Glu	Asp	Leu	Tyr	Asn	Glu	Met	Lys
2195					2200					2205					
Trp	Gln	Lys	Lys	Ile	Arg	Asn	Asn	Pro	Ala	Leu	Phe	Trp	Phe	Ser	Arg
2210					2215					2220					
His	Ile	Ser	Leu	Trp	Gly	Ser	Ile	Ser	Phe	Asn	Leu	Ala	Val	Phe	Ile
2225					2230					2235					
Asn	Leu	Ala	Val	Ala	Leu	Phe	Tyr	Pro	Phe	Gly	Asp	Asp	Gly	Asp	Glu
2245					2250					2255					
Gly	Thr	Leu	Ser	Pro	Leu	Phe	Ser	Ala	Leu	Leu	Trp	Val	Ala	Val	Ala
2260					2265					2270					
Ile	Cys	Thr	Ser	Met	Leu	Phe	Phe	Ser	Lys	Pro	Val	Gly	Ile	Arg	
2275					2280					2285					
Pro	Phe	Leu	Val	Ser	Ile	Met	Leu	Arg	Ser	Ile	Tyr	Thr	Ile	Gly	Leu
2290					2295					2300					
Gly	Pro	Thr	Leu	Ile	Leu	Leu	Gly	Ala	Ala	Asn	Leu	Cys	Asn	Lys	Ile
2305					2310					2315					
Val	Phe	Leu	Val	Ser	Phe	Val	Gly	Asn	Arg	Gly	Thr	Phe	Thr	Arg	Gly
2325					2330					2335					
Tyr	Arg	Ala	Val	Ile	Leu	Asp	Met	Ala	Phe	Leu	Tyr	His	Val	Ala	Tyr
2340					2345					2350					
Val	Leu	Val	Cys	Met	Leu	Gly	Leu	Phe	Val	His	Glu	Phe	Phe	Tyr	Ser
2355					2360					2365					
Phe	Leu	Leu	Phe	Asp	Leu	Val	Tyr	Arg	Glu	Glu	Thr	Leu	Leu	Asn	Val
2370					2375					2380					
Ile	Lys	Ser	Val	Thr	Arg	Asn	Gly	Arg	Ser	Ile	Ile	Leu	Thr	Ala	Val
2385					2390					2395					
Leu	Ala	Leu	Ile	Leu	Val	Tyr	Leu	Phe	Ser	Ile	Ile	Gly	Phe	Leu	Phe
2405					2410					2415					

Leu Lys Asp Asp Phe Thr Met Glu Val Asp Arg Leu Lys Asn Arg Thr
 2420 2425 2430
 Pro Val Thr Gly Asn Asp Gly Val Pro Thr Met Thr Leu Thr Ser Met
 2435 2440 2445
 Leu Gly Thr Cys Pro Lys Glu Asn Cys Ser Pro Thr Ile Pro Ser Ser
 2450 2455 2460
 Asn Ala Ala Gly Glu Gly Glu Asp Gly Ile Glu Arg Thr Cys Asp
 2465 2470 2475 2480
 Thr Leu Leu Met Cys Ile Val Thr Val Leu Asn Gln Gly Leu Arg Asn
 2485 2490 2495
 Gly Gly Gly Val Gly Asp Val Leu Arg Arg Pro Ser Lys Asp Glu Pro
 2500 2505 2510
 Leu Phe Ala Ala Arg Val Val Tyr Asp Leu Leu Phe Phe Phe Ile Val
 2515 2520 2525
 Ile Ile Ile Val Leu Asn Leu Ile Phe Gly Val Ile Ile Asp Thr Phe
 2530 2535 2540
 Ala Asp Leu Arg Ser Glu Lys Gln Lys Lys Glu Lys Ile Leu Lys Thr
 2545 2550 2555 2560
 Thr Cys Phe Ile Cys Gly Leu Glu Arg Asp Lys Phe Asp Asn Lys Thr
 2565 2570 2575
 Val Ser Phe Glu Glu His Ile Lys Ser Glu His Asn Met Trp His Tyr
 2580 2585 2590
 Leu Tyr Phe Ile Val Leu Val Lys Val Lys Asp Pro Thr Glu Tyr Thr
 2595 2600 2605
 Gly Pro Glu Ser Tyr Val Ala Gln Met Ile Thr Glu Lys Asn Leu Asp
 2610 2615 2620
 Trp Phe Pro Arg Met Arg Ala Met Ser Leu Val Ser Asn Glu Gly Asp
 2625 2630 2635 2640
 Ser Glu Gln Asn Glu Ile Arg Asn Leu Gln Glu Lys Leu Glu Ser Thr
 2645 2650 2655
 Met Ser Leu Val Lys Gln Leu Ser Gly Gln Leu Ala Glu Leu Lys Glu
 2660 2665 2670
 Gln Met Thr Glu Gln Arg Lys Asn Lys Gln Arg Leu Gly Phe Leu Gly
 2675 2680 2685
 Ser Asn Thr Pro His Glu Asn His His Met Pro Pro His
 2690 2695 2700

<210> 20

<211> 2670

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 20

Met Asn Glu Met Ser Ser Phe Leu His Ile Gly Asp Ile Val Ser Leu
 1 5 10 15
 Tyr Ala Glu Gly Ser Val Asn Gly Phe Ile Ser Thr Leu Gly Leu Val
 20 25 30
 Asp Asp Arg Cys Val Val Glu Pro Ala Ala Gly Asp Leu Asp Asn Pro
 35 40 45
 Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Val Cys Pro Met Asn Arg
 50 55 60
 Tyr Ser Ala Gln Lys Gln Tyr Trp Lys Ala Lys Gln Thr Lys Gln Asp
 65 70 75 80
 Lys Glu Lys Ile Ala Asp Val Val Leu Leu Gln Lys Leu Gln His Ala
 85 90 95
 Ala Gln Met Glu Gln Lys Gln Asn Asp Thr Glu Asn Lys Lys Val His

100					105					110					
Gly	Asp	Val	Val	Lys	Tyr	Gly	Ser	Val	Ile	Gln	Leu	Leu	His	Met	Lys
115					120					125					
Ser	Asn	Lys	Tyr	Leu	Thr	Val	Asn	Lys	Arg	Leu	Pro	Ala	Leu	Leu	Glu
130					135					140					
Lys	Asn	Ala	Met	Arg	Val	Thr	Leu	Asp	Ala	Thr	Gly	Asn	Glu	Gly	Ser
145	150					155					160				
Trp	Leu	Phe	Ile	Gln	Pro	Phe	Trp	Lys	Leu	Arg	Ser	Asn	Gly	Asp	Asn
165					170					175					
Val	Val	Val	Gly	Asp	Lys	Val	Ile	Leu	Asn	Pro	Val	Asn	Ala	Gly	Gln
180					185					190					
Pro	Leu	His	Ala	Ser	Asn	Tyr	Glu	Leu	Ser	Asp	Asn	Val	Gly	Cys	Lys
195					200					205					
Glu	Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Asn	Leu	Phe
210	215					220					225				
Met	Gln	Phe	Arg	Asp	His	Leu	Glu	Glu	Val	Leu	Lys	Gly	Gly	Asp	Val
225	230					235					240				
Val	Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu
245					250					255					
Tyr	Arg	Gly	Lys	Leu	Gln	Val	Phe	Leu	Arg	Thr	Thr	Leu	Arg	Gln	Ser
260					265					270					
Ala	Thr	Ser	Ala	Thr	Ser	Ser	Asn	Ala	Leu	Trp	Glu	Val	Glu	Val	Val
275					280					285					
His	His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	His	Trp	Asn	Gly	Leu	Tyr
290	295					300					305				
Arg	Phe	Lys	His	Leu	Ala	Thr	Gly	Asn	Tyr	Leu	Ala	Ala	Glu	Glu	Asn
305	310					315					320				
Pro	Ser	Tyr	Lys	Gly	Asp	Val	Ser	Asp	Pro	Lys	Ala	Ala	Gly	Pro	Gly
325					330					335					
Ala	Gln	Ser	Arg	Thr	Gly	Arg	Arg	Asn	Ala	Gly	Glu	Lys	Ile	Lys	Tyr
340					345					350					
Arg	Leu	Val	Ala	Val	Pro	His	Gly	Asn	Asp	Ile	Ala	Ser	Leu	Phe	Glu
355					360					365					
Leu	Asp	Pro	Thr	Thr	Leu	Gln	Lys	Thr	Asp	Ser	Phe	Val	Pro	Arg	Asn
370	375					380					385				
Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Ile	Gln	Ser
385	390					395					400				
Thr	Asn	Ala	Pro	Ile	Asp	Val	Glu	Glu	Glu	Arg	Pro	Ile	Arg	Leu	Met
405					410					415					
Leu	Gly	Thr	Cys	Pro	Thr	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile	Val
420					425					430					
Ser	Val	Pro	Val	Ser	Glu	Ile	Arg	Asp	Leu	Asp	Phe	Ala	Asn	Asp	Ala
435					440					445					
Ser	Ser	Met	Leu	Ala	Ser	Ala	Val	Glu	Lys	Leu	Asn	Glu	Gly	Phe	Ile
450					455					460					
Ser	Gln	Asn	Asp	Arg	Arg	Phe	Val	Ile	Gln	Leu	Leu	Glu	Asp	Leu	Val
465	470					475					480				
Phe	Phe	Val	Ser	Asp	Val	Pro	Asn	Asn	Gly	Gln	Asn	Val	Leu	Asp	Ile
485					490					495					
Met	Val	Thr	Lys	Pro	Asn	Arg	Glu	Arg	Gln	Lys	Leu	Met	Arg	Asp	Glu
500					505					510					
Asn	Ile	Leu	Lys	Gln	Ile	Phe	Gly	Ile	Leu	Lys	Ala	Pro	Phe	Arg	Asp
515					520					525					
Lys	Gly	Gly	Glu	Gly	Pro	Leu	Val	Arg	Leu	Glu	Glu	Leu	Ser	Asp	Gln
530					535					540					
Lys	Asn	Ala	Pro	Tyr	Gln	Tyr	Met	Phe	Arg	Leu	Cys	Tyr	Arg	Val	Leu
545	550					555					560				
Arg	His	Ser	Gln	Glu	Asp	Tyr	Arg	Lys	Asn	Gln	Glu	His	Ile	Ala	Lys
565					570					575					
Gln	Phe	Gly	Met	Met	Gln	Ser	Gln	Ile	Gly	Tyr	Asp	Ile	Leu	Ala	Glu
580					585					590					

Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys	595	600	605
His	Ile	Thr	Lys	Thr	Glu	Val	Glu	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys	610	615	620
Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser	625	630	635
Asn	Arg	Ile	Ala	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Cys	Val	645	650	655
Leu	Asp	Pro	Lys	Asn	Ser	Asp	Ile	Leu	Ile	Gln	Thr	Glu	Leu	Arg	Pro	660	665	670
Val	Lys	Glu	Met	Ala	Gln	Ser	His	Glu	Tyr	Leu	Ser	Ile	Glu	Tyr	Ser	675	680	685
Glu	Glu	Glu	Val	Trp	Leu	Thr	Trp	Thr	Asp	Arg	Asn	Asn	Glu	His	His	690	695	700
Glu	Lys	Ser	Val	Arg	Gln	Leu	Ala	Gln	Glu	Ala	Arg	Ala	Gly	Asn	Ala	705	710	715
His	Asp	Glu	Asn	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln	Leu	Lys	Leu	Phe	725	730	735
Ala	Arg	Met	Cys	Leu	Asp	Arg	Gln	Tyr	Leu	Ala	Ile	Asp	Glu	Ile	Ser	740	745	750
Lys	Gln	Leu	Gly	Val	Glu	Leu	Leu	Phe	Leu	Cys	Met	Ala	Asp	Glu	Met	755	760	765
Leu	Pro	Phe	Asp	Leu	Arg	Ala	Ser	Phe	Cys	His	Leu	Met	Leu	His	Val	770	775	780
His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Leu	Val	Thr	Pro	Val	Lys	Phe	Ala	785	790	795
Arg	Leu	Trp	Thr	Glu	Ile	Pro	Thr	Ala	Ile	Thr	Ile	Lys	Asp	Tyr	Asp	805	810	815
Ser	Asn	Leu	Asn	Ala	Ser	Arg	Asp	Asp	Lys	Lys	Asn	Lys	Phe	Ala	Ser	820	825	830
Thr	Met	Glu	Phe	Val	Glu	Asp	Tyr	Leu	Asn	Asn	Val	Val	Gly	Glu	Ala	835	840	845
Val	Pro	Phe	Ala	Asn	Asp	Glu	Lys	Asn	Ile	Leu	Thr	Phe	Glu	Val	Val	850	855	860
Ser	Leu	Ala	His	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Ser	Phe	Ser	Glu	865	870	875
Leu	Leu	Arg	Leu	Thr	Arg	Thr	Leu	Leu	Gly	Ile	Ile	Asp	Cys	Ile	Gln	885	890	895
Ala	Pro	Ala	Ala	Val	Leu	Gln	Ala	Tyr	Glu	Glu	Pro	Gly	Gly	Lys	Asn	900	905	910
Val	Arg	Arg	Ser	Ile	Gln	Gly	Val	Gly	His	Met	Met	Ser	Thr	Met	Val	915	920	925
Leu	Ser	Arg	Lys	Gln	Ser	Val	Phe	Gly	Ala	Ser	Ser	Leu	Pro	Thr	Gly	930	935	940
Val	Gly	Val	Pro	Glu	Gln	Leu	Asp	Arg	Ser	Lys	Phe	Glu	Asp	Asn	Glu	945	950	955
His	Thr	Val	Val	Met	Glu	Thr	Lys	Leu	Lys	Ile	Leu	Glu	Ile	Leu	Gln	965	970	975
Phe	Ile	Leu	Asn	Val	Arg	Leu	Asp	Tyr	Arg	Ile	Ser	Tyr	Leu	Leu	Ser	980	985	990
Val	Phe	Lys	Lys	Glu	Phe	Val	Glu	Val	Phe	Pro	Met	Gln	Asp	Ser	Gly	995	1000	1005
Ala	Asp	Gly	Thr	Ala	Pro	Ala	Phe	Asp	Ser	Ser	Thr	Ala	Asn	Met	Asn	1010	1015	1020
Leu	Asp	Arg	Ile	Gly	Glu	Gln	Ala	Glu	Ala	Met	Phe	Gly	Val	Gly	Lys	1025	1030	1035
Thr	Ser	Ser	Met	Leu	Glu	Val	Asp	Asp	Glu	Gly	Gly	Arg	Met	Phe	Leu	1045	1050	1055
Arg	Val	Leu	Leu	His	Leu	Thr	Met	His	Asp	Tyr	Pro	Pro	Leu	Val	Ser	1060	1065	1070
Gly	Ala	Leu	Gln	Leu	Leu	Phe	Lys	His	Phe	Ser	Gln	Arg	Gln	Glu	Ala			

1075	1080	1085
Met His Thr Phe Lys Gln Val Gln Leu Leu Ile Ser Ala Gln Asp Val		
1090	1095	1100
Glu Asn Tyr Lys Val Ile Lys Ser Glu Leu Asp Arg Leu Arg Thr Met		
1105	1110	1115
Val Glu Lys Ser Glu Leu Trp Val Asp Lys Lys Gly Ser Val Lys Gly		
1125	1130	1135
Glu Glu Gly Glu Ala Gly Ala Ser Lys Asp Lys Lys Glu Arg Pro Ser		
1140	1145	1150
Asp Glu Glu Gly Phe Leu Gln Pro His Gly Glu Lys Ser Ser Glu Asn		
1155	1160	1165
Tyr Gln Ile Val Lys Gly Ile Leu Glu Arg Leu Asn Lys Met Cys Gly		
1170	1175	1180
Val Gly Glu Gln Met Arg Lys Lys Gln Gln Arg Leu Leu Lys Asn Met		
1185	1190	1195
Asp Ala His Lys Val Met Leu Asp Leu Leu Gln Ile Pro Tyr Asp Lys		
1205	1210	1215
Asn Asp Asn Lys Met Met Glu Ile Leu Arg Tyr Thr His Gln Phe Leu		
1220	1225	1230
Gln Lys Phe Cys Ala Gly Asn Pro Gly Asn Gln Ala Leu Leu His Lys		
1235	1240	1245
His Leu Gln Leu Phe Leu Thr Pro Gly Leu Leu Glu Ala Glu Thr Met		
1250	1255	1260
Gln His Ile Phe Leu Asn Asn Tyr Gln Leu Cys Ser Glu Ile Ser Glu		
1265	1270	1275
Pro Val Leu Gln His Phe Val His Cys Trp Pro Thr His Gly Arg His		
1285	1290	1295
Val Gln Tyr Leu Asp Phe Leu His Thr Val Ile Lys Ala Glu Gly Lys		
1300	1305	1310
Tyr Val Lys Lys Cys Gln Asp Met Ile Met Thr Glu Leu Thr Asn Ala		
1315	1320	1325
Gly Asp Asp Val Val Val Phe Tyr Asn Asp Lys Ala Ser Leu Ala His		
1330	1335	1340
Leu Leu Asp Met Met Lys Ala Ala Arg Asp Gly Val Glu Asp His Ser		
1345	1350	1355
Pro Leu Met Tyr His Ile Ser Leu Val Asp Leu Leu Ala Ala Cys Ala		
1365	1370	1375
Glu Gly Lys Asn Val Tyr Thr Glu Ile Lys Cys Thr Ser Leu Leu Pro		
1380	1385	1390
Leu Glu Asp Val Val Ser Val Val Thr His Glu Asp Cys Ile Thr Glu		
1395	1400	1405
Val Lys Met Ala Tyr Val Asn Phe Val Asn His Cys Tyr Val Asp Thr		
1410	1415	1420
Glu Val Glu Met Lys Glu Ile Tyr Thr Ser Asn His Ile Trp Thr Leu		
1425	1430	1435
Phe Glu Asn Phe Thr Leu Asp Met Ala Leu Val Cys Asn Lys Arg Glu		
1445	1450	1455
Lys Arg Leu Ser Asp Pro Thr Leu Glu Lys Tyr Val Leu Thr Val Val		
1460	1465	1470
Leu Asp Thr Ile Ser Ala Phe Phe Ser Ser Pro Phe Ser Glu Asn Ser		
1475	1480	1485
Thr Ser Leu Gln Thr His Gln Thr Ile Val Val Gln Leu Leu Gln Ser		
1490	1495	1500
Thr Thr Arg Leu Leu Glu Cys Pro Trp Leu Gln Gln His Lys Gly		
1505	1510	1515
Ser Val Glu Ala Cys Val Arg Thr Leu Ala Met Val Ala Lys Ser Arg		
1525	1530	1535
Ala Ile Leu Leu Pro Met Asp Leu Asp Ala His Met Ser Ala Leu Leu		
1540	1545	1550
Ser Ser Gly Gly Ser Cys Ser Ala Ala Ala Gln Arg Ser Ala Ala Asn		
1555	1560	1565

Tyr Lys Thr Ala Thr Arg Thr Phe Pro Arg Val Ile Pro Thr Ala Asn
 1570 1575 1580
 Gln Trp Asp Tyr Lys Asn Ile Ile Glu Lys Leu Gln Asp Ile Ile Thr
 1585 1590 1595 1600
 Ala Leu Glu Glu Arg Leu Lys Pro Leu Val Gln Ala Glu Leu Ser Val
 1605 1610 1615
 Leu Val Asp Met Leu His Trp Pro Glu Leu Leu Phe Leu Glu Gly Ser
 1620 1625 1630
 Glu Ala Tyr Gln Arg Cys Glu Ser Gly Gly Phe Leu Ser Lys Leu Ile
 1635 1640 1645
 Arg His Thr Lys Gly Leu Met Glu Ser Glu Glu Lys Leu Cys Val Lys
 1650 1655 1660
 Val Leu Arg Thr Leu Gln Gln Met Leu Gln Lys Lys Ser Lys Tyr Gly
 1665 1670 1675 1680
 Asp Arg Gly Asn Gln Leu Arg Lys Met Leu Leu Gln Asn Tyr Leu Gln
 1685 1690 1695
 Asn Arg Lys Ser Gly Pro Arg Gly Glu Leu Thr Asp Pro Thr Gly Ser
 1700 1705 1710
 Gly Val Asp Gln Asp Trp Ser Ala Ile Ala Ala Thr Gln Cys Arg Leu
 1715 1720 1725
 Asp Lys Glu Gly Ala Thr Lys Leu Val Cys Asp Leu Ile Thr Ser Thr
 1730 1735 1740
 Lys Asn Glu Lys Ile Phe Gln Glu Ser Ile Gly Leu Ala Ile Arg Leu
 1745 1750 1755 1760
 Leu Asp Gly Gly Asn Thr Glu Ile Gln Lys Ser Phe Tyr Asn Leu Met
 1765 1770 1775
 Thr Ser Asp Lys Lys Ser Glu Arg Phe Phe Lys Val Leu His Asp Arg
 1780 1785 1790
 Met Lys Arg Ala Gln Gln Glu Thr Lys Ser Thr Val Ala Val Asn Met
 1795 1800 1805
 Ser Asp Leu Gly Ser Gln Pro Arg Glu Asp Arg Glu Pro Ala Asp Pro
 1810 1815 1820
 Thr Thr Lys Gly Arg Val Ser Ser Phe Ser Met Pro Ser Ser Ser Arg
 1825 1830 1835 1840
 Tyr Ser Leu Gly Pro Gly Leu His Arg Gly His Asp Val Ser Glu Arg
 1845 1850 1855
 Ala Gln Asn Asn Glu Met Gly Thr Ser Val Leu Ile Met Arg Pro Ile
 1860 1865 1870
 Leu Arg Phe Leu Gln Leu Leu Cys Glu Asn His Asn Arg Asp Leu Gln
 1875 1880 1885
 Asn Phe Leu Arg Cys Gln Asn Asn Lys Thr Asn Tyr Asn Leu Val Cys
 1890 1895 1900
 Glu Thr Leu Gln Phe Leu Asp Ile Met Cys Gly Ser Thr Thr Gly Gly
 1905 1910 1915 1920
 Leu Gly Leu Leu Gly Leu Tyr Ile Asn Glu Asp Asn Val Gly Leu Val
 1925 1930 1935
 Ile Gln Thr Leu Glu Thr Leu Thr Glu Tyr Cys Gln Gly Pro Cys His
 1940 1945 1950
 Glu Asn Gln Thr Cys Ile Val Thr His Glu Ser Asn Gly Ile Asp Ile
 1955 1960 1965
 Ile Thr Ala Leu Ile Leu Asn Asp Ile Ser Pro Leu Cys Lys Tyr Arg
 1970 1975 1980
 Met Asp Leu Val Leu Gln Leu Lys Asp Asn Ala Ser Lys Leu Leu Leu
 1985 1990 1995 2000
 Ala Leu Met Glu Ser Arg His Asp Ser Glu Asn Ala Glu Arg Ile Leu
 2005 2010 2015
 Ile Ser Leu Arg Pro Gln Glu Leu Val Asp Val Ile Lys Lys Ala Tyr
 2020 2025 2030
 Leu Gln Glu Glu Glu Arg Glu Asn Ser Glu Val Ser Pro Arg Glu Val
 2035 2040 2045
 Gly His Asn Ile Tyr Ile Leu Ala Leu Gln Leu Ser Arg His Asn Lys

2050	2055	2060
Gln Leu Gln His Leu Leu Lys Pro Val Lys Arg Ile Gln Glu Glu Glu		
2065	2070	2075
Ala Glu Gly Ile Ser Ser Met Leu Ser Leu Asn Asn Lys Gln Leu Ser		2080
	2085	2090
Gln Met Leu Lys Ser Ser Ala Pro Ala Gln Glu Glu Glu Glu Asp Pro		2095
	2100	2105
Leu Ala Tyr Tyr Glu Asn His Thr Ser Gln Ile Glu Ile Val Arg Gln		2110
	2115	2120
Asp Arg Ser Met Glu Gln Ile Val Phe Pro Val Pro Ala Ile Cys Gln		2125
	2130	2135
Phe Leu Thr Glu Glu Thr Lys His Arg Leu Phe Thr Thr Thr Glu Gln		2140
2145	2150	2155
Asp Glu Gln Gly Ser Lys Val Ser Asp Phe Phe Asp Gln Ser Ser Phe		2160
	2165	2170
Leu His Asn Glu Met Glu Trp Gln Arg Arg Leu Arg Ser Met Pro Leu		2175
	2180	2185
Ile Tyr Trp Phe Ser Arg Arg Met Thr Leu Trp Gly Ser Ile Ser Phe		2190
	2195	2200
Asn Leu Ala Val Phe Ile Asn Ile Ile Ile Ala Phe Phe Tyr Pro Tyr		2205
	2210	2215
Val Glu Gly Ala Ser Thr Gly Val Leu Gly Ser Pro Leu Ile Ser Leu		2220
2225	2230	2235
Leu Phe Trp Ile Leu Ile Cys Phe Ser Ile Ala Ala Leu Phe Thr Lys		2240
	2245	2250
His Tyr Ser Val Arg Pro Leu Ile Val Ala Leu Val Leu Arg Ser Ile		2255
	2260	2265
Tyr Tyr Leu Gly Ile Gly Pro Thr Leu Asn Ile Leu Gly Ala Leu Asn		2270
	2275	2280
Leu Thr Asn Lys Ile Val Phe Val Val Ser Phe Val Gly Asn Arg Gly		2285
	2290	2295
Thr Phe Ile Arg Gly Tyr Lys Ala Met Val Met Asp Met Glu Phe Leu		2300
2305	2310	2315
Tyr His Val Gly Tyr Ile Leu Thr Ser Val Leu Gly Leu Phe Ala His		2320
	2325	2330
Glu Leu Phe Tyr Ser Ile Leu Leu Phe Asp Leu Ile Tyr Arg Glu Glu		2335
	2340	2345
Thr Leu Phe Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Ser Ile		2350
	2355	2360
Leu Leu Thr Ala Leu Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser Ile		2365
	2370	2375
Val Gly Phe Leu Phe Leu Lys Asp Asp Phe Ile Leu Glu Val Asp Arg		2380
2385	2390	2395
Leu Pro Gly Asn His Ser Arg Ala Ser Thr Leu Gly Met Pro His Gly		2400
	2405	2410
Ala Ala Thr Phe Met Gly Thr Cys Ser Gly Asp Lys Met Asp Cys Val		2415
	2420	2425
Ser Glu Val Ser Val Pro Glu Ile Leu Glu Glu Asp Glu Glu Leu Asp		2430
	2435	2440
Ser Thr Glu Arg Ala Cys Asp Thr Leu Leu Met Cys Ile Val Thr Val		2445
	2450	2455
Met Asn His Gly Leu Arg Asn Gly Gly Gly Val Gly Asp Ile Leu Arg		2460
2465	2470	2475
Lys Pro Ser Lys Asp Glu Ser Leu Phe Pro Ala Arg Val Val Tyr Asp		2480
	2485	2490
Leu Leu Phe Phe Phe Ile Val Ile Ile Ile Val Leu Asn Leu Ile Phe		2495
	2500	2505
Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys Gln Lys		2510
	2515	2520
Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu Glu Arg		2525
	2530	2535
		2540

Asp Lys Phe Asp Asn Lys Thr Val Ser Phe Glu Glu His Ile Lys Leu
 2545 2550 2555 2560
 Glu His Asn Met Trp Asn Tyr Leu Tyr Phe Ile Val Leu Val Arg Val
 2565 2570 2575
 Lys Asn Lys Thr Asp Tyr Thr Gly Pro Glu Ser Tyr Val Ala Gln Met
 2580 2585 2590
 Ile Lys Asn Lys Asn Leu Asp Trp Phe Pro Arg Met Arg Ala Met Ser
 2595 2600 2605
 Leu Val Ser Gly Glu Gly Glu Gly Glu Gln Asn Glu Ile Arg Ile Leu
 2610 2615 2620
 Gln Glu Lys Leu Gly Ser Thr Met Lys Leu Val Ser His Leu Thr Ala
 2625 2630 2635 2640
 Gln Leu Asn Glu Leu Lys Glu Gln Met Thr Glu Gln Arg Lys Arg Arg
 2645 2650 2655
 Gln Arg Leu Gly Phe Val Asp Val Gln Asn Cys Met Ser Arg
 2660 2665 2670

<210> 21
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:/note =
 synthetic construct

<221> VARIANT
 <222> 2, 3
 <223> Xaa = Any amino acid

<400> 21
 Arg Xaa Xaa Ser
 1

<210> 22
 <211> 9759
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:/note =
 synthetic construct

<400> 22
 gagagaaagc gcacgccgag aggaggtgtg ggtgttccgc tcccatccta acggaacgag 60
 ctccctcttc gcggacatgg gattgcccag cggtctgctaa cccctgtcct ggtcctgata 120
 cctcaaaccg gcgtggctcc ccggtcacca aggagctgac tacaaaggat ttgcatcctt 180
 ggctgggagt ccattggcta cagagtgcct gacctgggtc aggcttttca acaaggacat 240
 gtctgacaaa atgtctagtt tcctacatat cggagacatt tgttctctgt atgcagaggg 300
 atctacgaat ggatttatca gcaccttggg cttggttgat gaccgttgcg ttgtacagcc 360
 agaagctggg gaccttaaca atccacccaa gaaattcaga gactgcctct ttaagctatg 420
 tcctatgaat cgatattctg cacagaagca gttctggaaa gctgctaagc ccggggccaa 480
 cagtacaaca gatgcggtgc tgc tcaacaa attgcatcat gctgcagact tggaaaagaa 540
 gcagaatgag acagaaaaca ggaaattgct ggggacggtc atccagtatg gcaacgtgat 600
 ccagctccta catttgaaaa gcaataaata cttaactgtg aataagaggc ttctgtccct 660
 gctggagaag aacgccatga gagtgcggtt ggatgaggct ggaaatgaag ggtcttggtt 720
 ttacattcag ccgttctaca agctccgctc catcggagac agtgtggtca taggtgacaa 780
 ggtagttttg aaccctgtca atgctgggca gccgctacat gccagcagcc atcagctggt 840
 ggataacccg ggctgcaatg aggtcaactc cgtcaactgt aacacaagct ggaaaatagt 900

gcttttcatg	aatggagtg	ataacaaaga	tgacattcta	aaaggaggtg	atgtggtaag	960
actcttccat	gctgagcaag	agaagtttct	cacgtgcgat	gagcacagga	agaagcagca	1020
cgtcttcctg	aggacaaccg	gcagacagtc	agccacgtcg	gccaccagct	ccaaagccct	1080
gtgggaagtg	gaggtagtcc	agcatgaccc	atgtcggggt	ggagctgggt	actggaatag	1140
cctcttcctg	ttcaagcacc	tggtacaggg	gcattacttg	gcagcagagg	tagaccctga	1200
ctttgaggaa	gaatgcctgg	agtttcagcc	ctcagtggtg	cctgatcagg	acgcatctcg	1260
gagcaggttg	agaaatgccc	aagaaaaaat	ggtgtactct	ctgggtctctg	tgcttgaggg	1320
caacgacatc	tcctccatct	ttgagctaga	ccccacaact	ctacgtggag	gtgacagcct	1380
tgtcccaagg	aactcctatg	tccggctcag	acacctgtgt	acaaacacct	gggttcacag	1440
cacaaacatc	cccattgaca	aggaagagga	aaaacctgtc	atgctgaaga	ttggtacctc	1500
tcccctgaag	gaggacaagg	aagcttttgc	catagtcccc	gtttctcctg	ctgaggttcg	1560
ggacctggac	tttgccaatg	atgccagcaa	ggtgctgggc	tccatcgctg	ggaagttgga	1620
aaagggcacc	atcaccagga	atgagagaag	gtctgtcacc	aagctgtctg	aagacttggt	1680
ttactttgtc	acgggtggaa	cgaactctgg	ccaagacgtg	cttgaagtag	tcttctctaa	1740
gccaacccga	gagcggcaga	agctgatgag	ggaacagaat	attctcaagc	agatcttcaa	1800
gcttttgcat	gcccccttca	cggactgcgg	ggatggccca	atgcttcggc	tgaggagagct	1860
gggggaccag	cggcacgctc	ctttcagaca	catttgccga	ctctgctaca	gggtcctgag	1920
acactcacag	caagactaca	ggaagaacca	ggagtacata	gccaagcagt	ttggcttcat	1980
gcagaagcag	attggctatg	atgtgctggc	cgaagacacc	atcactgccc	tgctccacaa	2040
caaccgaaag	ctcctggaaa	agcacatcac	cgcagcagag	attgacacgt	ttgtcagcct	2100
ggtgcgaaag	aacaggaggc	ccagggttctt	ggattacctc	tctgacctct	gtgtatccat	2160
gaataagtca	atccctgtga	cccaggagct	catttgtaaa	gctgtgctga	atcccaccaa	2220
tgctgacatc	ctgattgaga	ccaagttggt	tctttctcgt	tttgagtttg	aaggcgtttc	2280
caccggagag	aatgctctgg	aagctgggga	agatgaggaa	gaggtgtggc	tgttctggag	2340
ggacagcaac	aaagagatcc	gtagcaagag	tgttagggaa	ttggcacaag	atgctaaaga	2400
gggacagaag	gaagacaggg	atgtcctcag	ctactacagg	tatcagctga	acctctttgc	2460
aaggatgtgt	ctggaccgcc	agtacctggc	catcaatgaa	atatccgggc	agctggatgt	2520
tgacctcctc	ctccgctcac	tgtccgatga	gaacctcccc	tatgacctca	gagcatcctt	2580
ttgcgcctc	atgcttcaca	tgcatgtgga	ccgagatccc	caggagcagg	tgacctctgt	2640
gaaatacgcc	cgtctgtggt	cagaaattcc	ctccgagatc	gccattgacg	actatgacag	2700
cagtggagca	tcgaaggatg	aaatcaagga	gaggtttgct	cagacgatgg	agtttgtgga	2760
ggagtacctg	agagatgtgg	tttgtcaaa	attccccctt	tctgataagg	agaaaaataa	2820
gctcacatth	gaggttgtga	acttagccag	gaacctcata	tactttggct	tctacaactt	2880
ttctgacctt	ctccgattaa	ccaagatcct	cttggcaatc	ttagactgtg	ttcatgtgac	2940
aaccatcttc	cccattagca	agatgacgaa	aggcgaagag	aataaaggca	gcaacgtgat	3000
gagatctatc	catggagttg	gggagctcat	gacctcaggt	gtgcttcggg	gaggaggctt	3060
tttgcccatg	actcctatgg	ctgctgcccc	tgaaggaaat	gtgaagcagg	cagagccaga	3120
gaaagaggat	atcatggtca	tggacaccaa	gttaaagatc	attgaaatac	tccagtttat	3180
tttgaatgtg	agattggatt	ataggatctc	ctgcctcctg	tgtatatatta	agcgggagtt	3240
tgatgaaagc	aattccaggt	catcagaaac	atcctccgga	aacagcagcc	agaaggggcc	3300
aagtaatgta	ccaggtgtct	ttgactttga	acacattgaa	gagcaagcag	aaggcatctt	3360
tgggggaagt	gaggagaaca	cacctctgga	cttggatgat	catggtggca	gaaccttcct	3420
cagggctcctg	ctccacttga	caatgcatga	ttaccacccc	ctggtgtctg	gggcccctgca	3480
gctcctcttc	cggcatttca	gccagaggca	ggaggtcctt	caggccttca	aacaggttca	3540
actgctgggt	actagccaag	atgtggacaa	ctacaaacag	atcaagcaag	acttgagcca	3600
gctaagatcc	atcgtggaga	agtctgagct	ctgggtatatac	aaaggccagg	gtcccgatga	3660
gcctatggac	ggagcctctg	gtgaaaacga	acataagaaa	actgaggagg	ggaccagtaa	3720
gccactgaag	cacgaaagca	ccagcagcta	caactaccga	gtggtgaaag	agattctgat	3780
tcgacttagc	aagctctgtg	ttcaagagag	cgctcgggtg	aggaagagca	ggaagcagca	3840
gcagcgactg	ctgaggaaca	tgggtgcccc	tgctgtgggtg	ctggagctgc	tgcatatccc	3900
ctatgagaag	gccgaagata	ccaagatgca	ggagatcatg	aggctggctc	acgaatttct	3960
gcagaatttc	tgcgcaggca	accagcagaa	ccaagctttg	ctacataaac	acataaacct	4020
gtttctcaac	ccagggatcc	tggagcaggt	gaccatgcag	cacatcttca	tgaacaactt	4080
ccagctgtgc	agtgagatca	acgagagagt	ggtccagcat	ttcgttcaact	gcatagagac	4140
ccacggctga	aatgtccagt	atatcaagtt	tctccagact	attgtcaagg	ccgaagggaa	4200
attcattaaa	aagtgccaa	acatggtcat	ggctgagctt	gtcaattctg	gagaggagct	4260
cctcgtgttc	tacaatgaca	gagcctcttt	ccagactctg	atccagatga	tgcggtccga	4320
gcgtgaccgg	atggatgaga	acagccctct	catgtaccac	atccatctgg	tggagctctt	4380
ggctgtgtgc	acagagggca	agaatgtgta	cacagagatc	aagtgcact	ccctgctccc	4440
gctcgatgac	atcgttcgtg	tggtcactca	tgaagactgt	atccccgagg	ttaagattgc	4500
ttacatcaac	ttcctgaatc	actgctatgt	ggacactgag	gtggagatga	aggagattta	4560

cacaagtaat	cacatgtgga	agttgtttga	gaatttcctc	gtggacatct	gcagggcctg	4620
taacaacaca	agtgacagga	agcatgcaga	ctcggttctg	gagaagtag	tcactgaaat	4680
cgtgatgagc	attgtcacca	ccttcttcag	ctctcccttc	tcagaccaga	gtaccactct	4740
gcagactcgc	cagcctgtct	ttgtgcagct	cctgcaaggc	gtgttccgag	tttaccactg	4800
caactgggtg	atgccgagcc	agaaagcctc	ggtggagagc	tgtatccgcg	tgctctctga	4860
cgtagccaag	agccgggcca	tagccattcc	tggtgaccta	gacagccaag	tcaacaacct	4920
cttctctgaag	tcccacaaca	ttgtgcagaa	aacagccatg	aactggcggg	tatcagcccc	4980
caacgctgct	cgtagagact	ctgtcctggc	agcttcacga	gactaccgaa	atattattga	5040
gaggttacag	gacatgggtg	ctgccctgga	ggaccgactc	aggcccttgg	tccaggccga	5100
gctgtctgtg	ctcgtggatg	ttctacacag	accggaactg	cttttccctg	agaacacgga	5160
tgccaggagg	aaatgcgaaa	gtggagggtt	catctgcaag	ctcataaaac	acaccaagca	5220
gctgctagag	gagaatgaag	agaaactgtg	cattaaagtc	ttacagaccc	tcagggaaat	5280
gatgaccaa	gatagaggct	atggagaaaa	gcaaatttcc	attgatgaat	tggaaaatgc	5340
cgagctgcca	cagccaccgg	aagctgagaa	ctccacagag	caggagcttg	aaccaagtcc	5400
acccttgagg	caactggaag	accataaaa	gggtgaggca	ctccggcaaa	ttttgggtcaa	5460
ccgttactat	ggaaacatca	gaccttcagg	aagaagagag	agccttacca	gctttggcaa	5520
tggtccacta	tcaccaggag	gacctcagca	gcctggggga	ggagggggag	gtcctgggtc	5580
cggctccaca	agccgggggtg	agatgagcct	ggctgaggtt	caatgtcatc	tcgacaagga	5640
aggcgctcc	aatctgggtc	tcgacctcat	aatgaatgca	tccagcgacc	gagtattcca	5700
cgaagcatt	ctcctggcca	tcgcacttct	ggaaggaggc	aacaccacta	tccagcactc	5760
atTTTTctgc	cggctgacgg	aagataagaa	atcagagaag	ttcttcaagg	tcttttacga	5820
tcgaatgaag	gtggcccagc	aggaaatcaa	ggcgacagt	accgtgaaca	ccagcgattt	5880
gggaaacaaa	aagaaagatg	atgaagtgga	ccgggatgcc	ccatcccgga	agaaagccaa	5940
agagcccaca	acacagataa	cagaagaggt	ccgggatcag	ctcttggaag	catctgctgc	6000
caccagaaaa	gcctttacca	ccttccggag	ggaggccgac	cctgatgacc	attaccaatc	6060
tggggagggc	acccaggcta	caacggacaa	agccaaggat	gacctagaga	tgagtgcagt	6120
catcaccatc	atgcagccta	tcctgcgctt	cctgcagctc	ctgtgtgaaa	accacaaccg	6180
cgatctgcag	aatttccttc	gttgccaaaa	taataagacc	aactacaact	tggtgtgtga	6240
gacactgcag	tttctggact	gtatctgtgg	gagcacaact	ggaggccttg	gtcttctcgg	6300
actgtacata	aatgaaaaga	atgtagctct	tatcaaccaa	accctggaga	gtctgactga	6360
gtactgtcaa	gggccttgcc	atgaaaacca	gaactgcatc	gccaccacg	agtccaatgg	6420
catcgatatc	atcacagccc	tcatccttaa	cgatatcaac	cctctgggga	agaaacggat	6480
ggacctgggtg	ttagaactga	agaacaatgc	ttcaaagcta	ctcctggcca	tcatggaaa	6540
cagacacgat	agtgaaaatg	cagagaggat	cctgtacaac	atgaggccca	aggagctggt	6600
ggaagtgate	aagaaggcct	acatgcaagg	cgaagtggag	tttgaggatg	gggagaacgg	6660
tgaggatgga	gcagcctccc	ccaggaacgt	gggccataac	atctacatcc	tcgctcacca	6720
gttggctcgg	cataacaaag	aacttcaaac	catgctgaaa	cctggaggcc	aggtggatgg	6780
cgatgaagct	ctggagttct	atgcgaagca	cacagcacia	attgagattg	tcagactgga	6840
ccgaactatg	gaacagattg	tcttccctgt	gccagcatc	tgtgaatttc	tgactaagga	6900
atcgaaactt	cgaatatatt	acaccacaga	gagggatgag	caaggcagca	agatcaatga	6960
cttcttctctg	cgctccgagg	acctctttaa	tgagatgaac	tggcagaaga	aacttcgagc	7020
ccagcctgtc	ttgtactggg	gcgcccga	catgtctttc	tggagcagca	tctccttcaa	7080
cctggccgtc	ctgatgaacc	tgctgggtgg	gtttttctac	ccatttaaag	gagtgaagg	7140
aggaacacta	gagcgcgact	ggtcggcct	ctctgtgaca	gccatgctca	tctctctggc	7200
aattgtcatt	gcgctgccca	agccccatgg	catccgggcc	ttaattgctt	ctacaatcct	7260
acgactgata	ttttcagttg	gattacagcc	cacactgttt	ctgctgggag	ctttcaatgt	7320
ctgcaataaa	atcatcttcc	tgatgagctt	tgtgggcaac	tgtgggacct	tcaccagagg	7380
ctaccgagcc	atggttcttg	acgttgagtt	cctctatcat	ttgctgtatc	tactgatctg	7440
tgccatgggc	ctcttcgtac	atgagttttt	ctatagtttg	ctgctttttg	atttagtgta	7500
cagagaggag	actttgctta	atgtcattaa	aagtgtcacc	cgcaatggac	gggtccatcat	7560
cttgacagcg	gtcctgggct	tgattctggt	ttacctgttc	tcaattgtgg	gctacctgtt	7620
cttcaaggat	gactttatct	tggagtaga	caggttgccc	aatgagacag	ctgggtccaga	7680
aactgggtgag	agttttgcc	acgatttcct	gtactctgat	gtgtgccggg	tagagacggg	7740
ggagaactgc	acctctccgg	cacccaaaga	agagctgctc	cctgtggaag	aaacggaaaca	7800
ggataaggag	cacacgtgtg	agacactgct	catgtgcatc	gtcaccttcc	tgagtcaagg	7860
gctgcggagt	gggggaggag	taggagatgt	gctcaggaag	ccatccaaag	aggagcctct	7920
gtttgctgca	agggatgatc	atgacctcct	cttcttcttc	atggatcatc	tcattgtcct	7980
gaacctcatt	tttgggggtc	tcacgcagac	ctttgctgac	ctgaggagtg	agaagcagaa	8040
gaaggaagag	atcttaaaaa	ccacgtgctt	catttgtggc	ttggaaaagg	acaagtttga	8100
caataagacc	gtcacctttg	aagagcacat	taaggaagaa	cacaacatgt	ggcactatct	8160
gtgcttcac	gtgctgggtg	aagtgaagga	ctccaccgag	tacaccgggc	ccgagagcta	8220

```

cgtggcagag atgatcaggg aaagaaacct tgattggttc cccaggatga gagccatgtc 8280
cctggtcagc agtgactctg aaggggaaca gaacgagctg aggaacctgc aggagaagct 8340
ggagtccacc atgaagctgg tcaccaatct ttctggccag ctgtcagaac taaaggacca 8400
gatgacagaa caaaggaagc agaaacaaag aattggcctt ctaggacatc ctctcacat 8460
gaatgtcaac ccacagcagc cagcctaagc aaatgagacg gagggactgt actcaaccct 8520
ttttaaatta ttgtcagcgt ggggtctggct cttggttctg atctgccctc taaggttaca 8580
tgtgcgctta gtacatttgt aaatactcgg ttttgtattg tatgtatatg attgcaattc 8640
tcagagggtt ggaçtttctg attgtaatta gctctgttgg catggtgact tgtcactcct 8700
gccaaaaata ttaaaaaatgc cttttttgga aggactacag aaagtacctg atttgcactt 8760
gaaccagatt atagatttaa aagtatatga catgtatttt gtatttaaaa ctagaatagc 8820
cagtatttat gttttttata aaactgtgca atacaaatta tgcaatcacc ataactctgt 8880
aactcctgag tgtcttaagg gagtgcgcat ctttgaagct gatctgttaa tacttatgta 8940
ataaatgggt aaatatcaaa tgatgatgct gctgccaaaa ttatattaat agcaagtttc 9000
tggcccctgg gcaattttgt accttghtaat taccctatgg tgatgctgtt tctcgttgct 9060
aatggcatta gtgcctcgta tcttagtgat aactccaggt ctgtgaacca ttcaaacaac 9120
attcattttt gagacaaagc aacttttagt tcaagggtaa ttttaagctt caaaattaat 9180
catttaaagt atttctttta gagagccatg ttagaggctc acacgttagc ttgaaaggag 9240
tcgatgaaat aattttttta aagggaactt tttacacgac gtttggaata acagcatatt 9300
gctgaccagt cagtgtcatc tcccagggtg attttgatgt caggttatag tcaaatagagc 9360
tagctgatgg tttctagatt ctcttcattc gaaccaacat gatgcagtag gtgagaagtt 9420
attatgcata tatacacata tacatccata taaggcaaag taggagctgt ccccttagga 9480
tgcatagctg cccccttagg gtgcagagct caacactgac agtgcgtgtc tgagagagcc 9540
acgtttgggt tttattttct tgtcacatga tttcttttct ggatgtgtgc aagtataaca 9600
ggaagtgttt tctacctgtt gcttggtttg tacctgggtc tcgttttact agaccatctc 9660
tgcacaaaag tttaaaaaat gaaccgtaag cagagtctg aagcaagtca agtttgtaag 9720
tgcatacctg aaattattta ataaatgacg cagaatact 9759

```

<210> 23

<211> 2710

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; Note =
synthetic construct

<400> 23

```

Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser
1          5          10          15
Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
20          25          30
Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
35          40          45
Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
50          55          60
Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
65          70          75          80
Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
85          90          95
Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
100         105         110
Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
115         120         125
Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
130         135         140
Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
145         150         155         160
Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
165         170         175

```

Val	Ile	Gly	Asp	Lys	Val	Val	Leu	Asn	Pro	Val	Asn	Ala	Gly	Gln	Pro	180	185	190
Leu	His	Ala	Ser	Ser	His	Gln	Leu	Val	Asp	Asn	Pro	Gly	Cys	Asn	Glu	195	200	205
Val	Asn	Ser	Val	Asn	Cys	Asn	Thr	Ser	Trp	Lys	Ile	Val	Leu	Phe	Met	210	215	220
Lys	Trp	Ser	Asp	Asn	Lys	Asp	Asp	Ile	Leu	Lys	Gly	Gly	Asp	Val	Val	225	230	235
Arg	Leu	Phe	His	Ala	Glu	Gln	Glu	Lys	Phe	Leu	Thr	Cys	Asp	Glu	His	245	250	255
Arg	Lys	Lys	Gln	His	Val	Phe	Leu	Arg	Thr	Thr	Gly	Arg	Gln	Ser	Ala	260	265	270
Thr	Ser	Ala	Thr	Ser	Ser	Lys	Ala	Leu	Trp	Glu	Val	Glu	Val	Val	Gln	275	280	285
His	Asp	Pro	Cys	Arg	Gly	Gly	Ala	Gly	Tyr	Trp	Asn	Ser	Leu	Phe	Arg	290	295	300
Phe	Lys	His	Leu	Ala	Thr	Gly	His	Tyr	Leu	Ala	Ala	Glu	Val	Asp	Pro	305	310	315
Asp	Phe	Glu	Glu	Glu	Cys	Leu	Glu	Phe	Gln	Pro	Ser	Val	Asp	Pro	Asp	325	330	335
Gln	Asp	Ala	Ser	Arg	Ser	Arg	Leu	Arg	Asn	Ala	Gln	Glu	Lys	Met	Val	340	345	350
Tyr	Ser	Leu	Val	Ser	Val	Pro	Glu	Gly	Asn	Asp	Ile	Ser	Ser	Ile	Phe	355	360	365
Glu	Leu	Asp	Pro	Thr	Thr	Leu	Arg	Gly	Gly	Asp	Ser	Leu	Val	Pro	Arg	370	375	380
Asn	Ser	Tyr	Val	Arg	Leu	Arg	His	Leu	Cys	Thr	Asn	Thr	Trp	Val	His	385	390	395
Ser	Thr	Asn	Ile	Pro	Ile	Asp	Lys	Glu	Glu	Glu	Lys	Pro	Val	Met	Leu	405	410	415
Lys	Ile	Gly	Thr	Ser	Pro	Leu	Lys	Glu	Asp	Lys	Glu	Ala	Phe	Ala	Ile	420	425	430
Val	Pro	Val	Ser	Pro	Ala	Glu	Val	Arg	Asp	Leu	Asp	Phe	Ala	Asn	Asp	435	440	445
Ala	Ser	Lys	Val	Leu	Gly	Ser	Ile	Ala	Gly	Lys	Leu	Glu	Lys	Gly	Thr	450	455	460
Ile	Thr	Gln	Asn	Glu	Arg	Arg	Ser	Val	Thr	Lys	Leu	Leu	Glu	Asp	Leu	465	470	475
Val	Tyr	Phe	Val	Thr	Gly	Gly	Thr	Asn	Ser	Gly	Gln	Asp	Val	Leu	Glu	485	490	495
Val	Val	Phe	Ser	Lys	Pro	Asn	Arg	Glu	Arg	Gln	Lys	Leu	Met	Arg	Glu	500	505	510
Gln	Asn	Ile	Leu	Lys	Gln	Ile	Phe	Lys	Leu	Leu	Gln	Ala	Pro	Phe	Thr	515	520	525
Asp	Cys	Gly	Asp	Gly	Pro	Met	Leu	Arg	Leu	Glu	Glu	Leu	Gly	Asp	Gln	530	535	540
Arg	His	Ala	Pro	Phe	Arg	His	Ile	Cys	Arg	Leu	Cys	Tyr	Arg	Val	Leu	545	550	555
Arg	His	Ser	Gln	Gln	Asp	Tyr	Arg	Lys	Asn	Gln	Glu	Tyr	Ile	Ala	Lys	565	570	575
Gln	Phe	Gly	Phe	Met	Gln	Lys	Gln	Ile	Gly	Tyr	Asp	Val	Leu	Ala	Glu	580	585	590
Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys	595	600	605
His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys	610	615	620
Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser	625	630	635
Met	Asn	Lys	Ser	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Ala	Val	645	650	655
Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Ile	Glu	Thr	Lys	Leu	Val	Leu			

Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
 1155 1160 1165
 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
 1170 1175 1180
 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
 1185 1190 1195 1200
 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
 1205 1210 1215
 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
 1220 1225 1230
 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
 1235 1240 1245
 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
 1250 1255 1260
 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
 1265 1270 1275 1280
 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
 1285 1290 1295
 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
 1300 1305 1310
 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
 1315 1320 1325
 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
 1330 1335 1340
 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser
 1345 1350 1355 1360
 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
 1365 1370 1375
 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
 1380 1385 1390
 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
 1395 1400 1405
 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
 1410 1415 1420
 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
 1425 1430 1435 1440
 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
 1445 1450 1455
 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
 1460 1465 1470
 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
 1475 1480 1485
 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
 1490 1495 1500
 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
 1505 1510 1515 1520
 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
 1525 1530 1535
 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
 1540 1545 1550
 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
 1555 1560 1565
 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
 1570 1575 1580
 Ala Arg Arg Asp Ser Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
 1585 1590 1595 1600
 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
 1605 1610 1615
 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
 1620 1625 1630
 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu

1635	1640	1645
Ser Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu		
1650	1655	1660
Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg		
1665	1670	1675
Glu Met Met Thr Lys Asp Arg Gly Tyr Ala Glu Lys Gly Glu Ala Leu		1680
	1685	1690
Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly		1695
	1700	1705
Arg Arg Glu Ser Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly		1710
	1715	1720
Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser		1725
	1730	1735
Thr Ser Arg Gly Glu Met Ser Leu Ala Glu Val Gln Cys His Leu Asp		1740
1745	1750	1755
Lys Glu Gly Ala Ser Asn Leu Val Ile Asp Leu Ile Met Asn Ala Ser		1760
	1765	1770
Ser Asp Arg Val Phe His Glu Ser Ile Leu Leu Ala Ile Ala Leu Leu		1775
	1780	1785
Glu Gly Gly Asn Thr Thr Ile Gln His Ser Phe Phe Cys Arg Leu Thr		1790
	1795	1800
Glu Asp Lys Lys Ser Glu Lys Phe Phe Lys Val Phe Tyr Asp Arg Met		1805
	1810	1815
Lys Val Ala Gln Gln Glu Ile Lys Ala Thr Val Thr Val Asn Thr Ser		1820
1825	1830	1835
Asp Leu Gly Asn Lys Lys Lys Asp Asp Glu Val Asp Arg Asp Ala Pro		1840
	1845	1850
Ser Arg Lys Lys Ala Lys Glu Pro Thr Thr Gln Ile Thr Glu Glu Val		1855
	1860	1865
Arg Asp Gln Leu Leu Glu Ala Ser Ala Ala Thr Arg Lys Ala Phe Thr		1870
	1875	1880
Thr Phe Arg Arg Glu Ala Asp Pro Asp Asp His Tyr Gln Ser Gly Glu		1885
	1890	1895
Gly Thr Gln Ala Thr Thr Asp Lys Ala Lys Asp Asp Leu Glu Met Ser		1900
1905	1910	1915
Ala Val Ile Thr Ile Met Gln Pro Ile Leu Arg Phe Leu Gln Leu Leu		1920
	1925	1930
Cys Glu Asn His Asn Arg Asp Leu Gln Asn Phe Leu Arg Cys Gln Asn		1935
	1940	1945
Asn Lys Thr Asn Tyr Asn Leu Val Cys Glu Thr Leu Gln Phe Leu Asp		1950
	1955	1960
Cys Ile Cys Gly Ser Thr Thr Gly Gly Leu Gly Leu Leu Gly Leu Tyr		1965
	1970	1975
Ile Asn Glu Lys Asn Val Ala Leu Ile Asn Gln Thr Leu Glu Ser Leu		1980
1985	1990	1995
Thr Glu Tyr Cys Gln Gly Pro Cys His Glu Asn Gln Asn Cys Ile Ala		2000
	2005	2010
Thr His Glu Ser Asn Gly Ile Asp Ile Ile Thr Ala Leu Ile Leu Asn		2015
	2020	2025
Asp Ile Asn Pro Leu Gly Lys Lys Arg Met Asp Leu Val Leu Glu Leu		2030
	2035	2040
Lys Asn Asn Ala Ser Lys Leu Leu Leu Ala Ile Met Glu Ser Arg His		2045
	2050	2055
Asp Ser Glu Asn Ala Glu Arg Ile Leu Tyr Asn Met Arg Pro Lys Glu		2060
2065	2070	2075
Leu Val Glu Val Ile Lys Lys Ala Tyr Met Gln Gly Glu Val Glu Phe		2080
	2085	2090
Glu Asp Gly Glu Asn Gly Glu Asp Gly Ala Ala Ser Pro Arg Asn Val		2095
	2100	2105
Gly His Asn Ile Tyr Ile Leu Ala His Gln Leu Ala Arg His Asn Lys		2110
	2115	2120
		2125

Glu Leu Gln Thr Met Leu Lys Pro Gly Gly Gln Val Asp Gly Asp Glu
 2130 2135 2140
 Ala Leu Glu Phe Tyr Ala Lys His Thr Ala Gln Ile Glu Ile Val Arg
 2145 2150 2155 2160
 Leu Asp Arg Thr Met Glu Gln Ile Val Phe Pro Val Pro Ser Ile Cys
 2165 2170 2175
 Glu Phe Leu Thr Lys Glu Ser Lys Leu Arg Ile Tyr Tyr Thr Thr Glu
 2180 2185 2190
 Arg Asp Glu Gln Gly Ser Lys Ile Asn Asp Phe Phe Leu Arg Ser Glu
 2195 2200 2205
 Asp Leu Phe Asn Glu Met Asn Trp Gln Lys Lys Leu Arg Ala Gln Pro
 2210 2215 2220
 Val Leu Tyr Trp Cys Ala Arg Asn Met Ser Phe Trp Ser Ser Ile Ser
 2225 2230 2235 2240
 Phe Asn Leu Ala Val Leu Met Asn Leu Leu Val Ala Phe Phe Tyr Pro
 2245 2250 2255
 Phe Lys Gly Val Arg Gly Gly Thr Leu Glu Pro His Trp Ser Gly Leu
 2260 2265 2270
 Leu Trp Thr Ala Met Leu Ile Ser Leu Ala Ile Val Ile Ala Leu Pro
 2275 2280 2285
 Lys Pro His Gly Ile Arg Ala Leu Ile Ala Ser Thr Ile Leu Arg Leu
 2290 2295 2300
 Ile Phe Ser Val Gly Leu Gln Pro Thr Leu Phe Leu Leu Gly Ala Phe
 2305 2310 2315 2320
 Asn Val Cys Asn Lys Ile Ile Phe Leu Met Ser Phe Val Gly Asn Cys
 2325 2330 2335
 Gly Thr Phe Thr Arg Gly Tyr Arg Ala Met Val Leu Asp Val Glu Phe
 2340 2345 2350
 Leu Tyr His Leu Leu Tyr Leu Leu Ile Cys Ala Met Gly Leu Phe Val
 2355 2360 2365
 His Glu Phe Phe Tyr Ser Leu Leu Leu Phe Asp Leu Val Tyr Arg Glu
 2370 2375 2380
 Glu Thr Leu Leu Asn Val Ile Lys Ser Val Thr Arg Asn Gly Arg Pro
 2385 2390 2395 2400
 Ile Ile Leu Thr Ala Ala Leu Ala Leu Ile Leu Val Tyr Leu Phe Ser
 2405 2410 2415
 Ile Val Gly Tyr Leu Phe Phe Lys Asp Asp Phe Ile Leu Glu Val Asp
 2420 2425 2430
 Arg Leu Pro Asn Glu Thr Ala Gly Pro Glu Thr Gly Glu Ser Leu Ala
 2435 2440 2445
 Asn Asp Phe Leu Tyr Ser Asp Val Cys Arg Val Glu Thr Gly Glu Asn
 2450 2455 2460
 Cys Thr Ser Pro Ala Pro Lys Glu Glu Leu Leu Pro Val Glu Glu Thr
 2465 2470 2475 2480
 Glu Gln Asp Lys Glu His Thr Cys Glu Thr Leu Leu Met Cys Ile Val
 2485 2490 2495
 Thr Val Leu Ser His Gly Leu Arg Ser Gly Gly Gly Val Gly Asp Val
 2500 2505 2510
 Leu Arg Lys Pro Ser Lys Glu Glu Pro Leu Phe Ala Ala Arg Val Ile
 2515 2520 2525
 Tyr Asp Leu Leu Phe Phe Phe Met Val Ile Ile Ile Val Leu Asn Leu
 2530 2535 2540
 Ile Phe Gly Val Ile Ile Asp Thr Phe Ala Asp Leu Arg Ser Glu Lys
 2545 2550 2555 2560
 Gln Lys Lys Glu Glu Ile Leu Lys Thr Thr Cys Phe Ile Cys Gly Leu
 2565 2570 2575
 Glu Arg Asp Lys Phe Asp Asn Lys Thr Val Thr Phe Glu Glu His Ile
 2580 2585 2590
 Lys Glu Glu His Asn Met Trp His Tyr Leu Cys Phe Ile Val Leu Val
 2595 2600 2605
 Lys Val Lys Asp Ser Thr Glu Tyr Thr Gly Pro Glu Ser Tyr Val Ala

2610	2615	2620
Glu Met Ile Arg Glu Arg Asn Leu Asp Trp Phe Pro Arg Met Arg Ala		
2625	2630	2635
Met Ser Leu Val Ser Ser Asp Ser Glu Gly Glu Gln Asn Glu Leu Arg		2640
	2645	2650
Asn Leu Gln Glu Lys Leu Glu Ser Thr Met Lys Leu Val Thr Asn Leu		2655
	2660	2665
Ser Gly Gln Leu Ser Glu Leu Lys Asp Gln Met Thr Glu Gln Arg Lys		2670
	2675	2680
Gln Lys Gln Arg Ile Gly Leu Leu Gly His Pro Pro His Met Asn Val		2685
	2690	2695
Asn Pro Gln Gln Pro Ala		2700
2705	2710	

<210> 24

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<220>

<221> VARIANT

<222> 2, 4, 5

<223> Xaa = any amino acid

<400> 24

Gly Xaa Gly Xaa Xaa Gly

1

5

<210> 25

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 25

Arg Arg Asp Ser

1

<210> 26

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 26

Arg Arg Glu Ser

1

<210> 27

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 27

Arg Arg Asp Glu

1

<210> 28

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 28

Arg Arg Glu Glu

1

<210> 29

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 29

Arg Arg Glu Ala

1

<210> 30

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 30

Arg Arg Asp Ala

1

<210> 31

<211> 48

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
synthetic construct

<400> 31

Gly Tyr Gly Glu Lys Gln Ile Ser Ile Asp Glu Leu Glu Asn Ala Glu

1

5

10

15

Leu Pro Gln Pro Pro Glu Ala Glu Asn Ser Thr Glu Glu Leu Glu Pro
 20 25 30
Ser Pro Pro Leu Arg Gln Leu Glu Asp His Lys Arg Gly Glu Ala Leu
 35 40 45

<210> 32

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence; note =
 synthetic construct

<400> 32

Gly Tyr Gly Glu Lys Gly Glu Ala Leu
 1 5